Educational Screen

Combined with

Visual Instruction News

JUNE, 1933

VOLUME XII NUMBER 6

CONTENTS

Editorial 153

Sciences Visually Demonstrated at Century of Progress 155

The Importance and Role of Visual Education in Our Schools. W. J. Hamilton 156

The Versatile Lantern Slide. W. T. R. Price 159

Government Activities in the Visual Field. Conducted by Margaret A. Klein 161

Department of Visual Instruction Notes. Conducted by Ellsworth C. Dent 163

News and Notes. Conducted by Josephine Hoffman 166

Film Production Activities 167

Among the Magazines and Books. Conducted by Marion F. Lanphier 168

The Film Estimates 169

The Church Field. Conducted by R. F. H. Johnson 170

School Department. Conducted by Dr. F. Dean McClusky 173

Among the Producers 178

Here They Are! A Trade Directory for the Visual Field 180

Contents of previous issues listed in Education Index.

THE EDUCATIONAL SCREEN, Inc.

DIRECTORATE AND STAFF

Herbert E. Slaught, Pres. — Dudley G. Hays
Frederick J. Lane, Treas. — Stanley R. Greene
Nelson L. Greene, Editor — Joseph J. Weber
Ellsworth C. Dent, Manager — R. F. H. Johnson
Evelyn J. Baker — Marion F. Lanphier
Josephine Hoffman — F. Dean McClusky
Otto M. Forkert — Stella Evelyn Myers

General and Editorial Offices, 64 East Lake St., Chicago, Illinois. Office of Publication, Morton, Illinois. Entered at the Post Office at Morton, Illinois, as Second Class Matter. Copyright, June, 1933, by the Educational Screen, Inc. Published every month except July and August. $2.00 a Year (Canada, $2.75; Foreign, $3.00) Single Copies, 25 cts.

This replica of Fort Dearborn, one of Chicago's most thrilling historical monuments, was constructed on the shore of Lake Michigan at Twenty-sixth street for the 1933 Century of Progress Exposition. Near here, a century ago, stood the original Fort Dearborn, and still nearer occurred in 1812 the massacre by Indians of the brave inhabitants of the Fort.

The photograph shows, left to right, the officers' barracks, a corner of the blockhouse, the powder magazine, soldiers' barracks. The corners of two other barracks appear on either side of the picture.

Fort Dearborn, Chicago Century of Progress Exposition

EDITORIAL

THERE is one debt, owed by every teacher to himself or herself, that should be placed at the top of the list for payment—namely, to spend a few days at least in Chicago this summer, and mostly inside the grounds of the Century of Progress Exposition. Any teacher who lets anything prevent that experience will be permanently poorer for it. Educators should come *en masse*, not only for what they will learn personally, but for what they will learn about learning. Fortunately, the annual meeting of the Visual Instruction Department of the N. E. A. also takes place the first week of July, in conjunction with the N. E. A. Convention in Chicago—making that the ideal week for said visit.

The great World's Columbian Exposition of 1893 was perhaps the finest effort of this country to date in the monumental presentation of American life and culture, in an unforgettable setting of classic beauty, dignity and charm. The nation has changed greatly in forty years. The new Century of Progress Exposition seems accurately to reflect and typify the change. It is still greater in physical extent, in its vast collections of materials, in its scientific methods of educational presentation. It portrays power and achievement, leans away from art toward industry, aims at mass rather than vista, is relentlessly modern instead of classic. Its riot of garish colors, its reckless combinations of bulk and line, its bold unconventionalities in shape and arrangement, and the whole bathed and permeated with electricity—it may all be more eye-filling than inspirational, but it is an irresistible command to "look and learn."

The great exposition, in the months ahead, will thrill millions of Americans with a new vision of the physics, the mechanics, the chemistry that are the bases of material life as we live it today. They will know the process behind the product, the inner reasons for results, the fascinating causes for things that have been mere commonplaces to them before. For millions the great fair will transform matter-of-fact into marvel, replace stolid acceptance with eager appreciation, set them on the highway to understanding.

For the teacher, the Century of Progress holds far more than this. We have merely to walk the endless corridors attentively and thoughtfully. Pause when an exhibit offers something for ourselves personally. But above all, let us study the throng of learners and the exhibits that are teaching them; realize that we are seeing in operation concentrated visual instruction on a colossal scale; and consider what it is accomplishing for millions *through their eyes alone*. If visual education can do this in wholesale, impersonal fashion, what will it accomplish under ideal conditions in American classrooms, with a few dozen pupils under the expert direction and control of an understanding teacher who knows what human eyes are for?

ONE "inducement" recently offered to the public by the Century of Progress is irresistibly comic, we suppose unintentionally so. The public is cordially urged to buy a season-ticket of admission for $15.00. The simple arithmetic, exceedingly simple, of the Fair authorities proves this to mean a 10-cent-a-day admission for the 150 days of the exposition. The final master touch is to declare this season-ticket "non-transferable."

Before they read the last line, there were probably tens of thousands of Chicagoans—helplessly awaiting summer "visits" by relatives and friends in colonies and droves—who were ready to rush to purchase. But that last line! Obviously $15.00 would allow 30 personal admissions at the regular retail rate, and the most insatiable fair-goer could hardly achieve so many. The only human being to want the 150 admissions would be he who needs to "work" daily the ever-changing populace within the gates with glib tongue or fluent fingers. We would suggest to the Police one real use for that $15.00 season-ticket. Whenever one is purchased, arrest the purchaser on sound suspicion as a pickpocket or con-man. Instead of hunting out the crooked gentry, merely wait for them at the box-office.

The idea of tapping the vast store of theatrical picture material, accumulated for a generation past, to select the wheat for educational purposes, has long been the fond dream of many educators. Such selection, in order to make synthetic motion pictures thoroughly suitable for classroom use, presents many grave difficulties. But "stills" are a different matter. Thousands are made yearly, by expert still-camera men, beautiful 8 x 10 prints. Many of these are of genuine educational value—perfect records of costly sets, backgrounds, costumes, and characteristic scenes of many lands and times, made accurate by meticulous research and built regardless of costs. Such pictures, at the enormous expense involved in creating the sets, would be impossible for the school field from any other source than moviedom.

Elsewhere in this issue is described a promising start on this salvage process. The first results are gratifying. Selections are evidently made from a distinctly educational view-point. No reference whatever is made to the producer or the original film concerned. Close-ups of well-known stars, or other elements which would identify the film and thus distract the learner, are carefully avoided. If such policy is maintained, and if free access to the storehouse is allowed indefinitely, a continuous stream of pictures invaluable to schools may result.

NELSON L. GREENE

Sciences Visually Demonstrated at Century of Progress

Biological Sciences

HOW LIFE begins and develops—evolution from the primitive cell to its highest organization in man—visualized for the non-scientific observer, is the purpose of the comprehensive biology section in the Hall of Science at A Century of Progress. The simple cell, unit from which all living forms, both animal and plant, are constructed, is the foundation. A complete biological laboratory is at work. Cell activities are demonstrated and illustrated by models of magnified cells. Methods of scientists in isolating and studying the cell are shown in utmost detail.

Physiology

A complete story of the development of the human being from the cell is told in the Embryological exhibits. Moving magnified cells illustrate how cells of different characteristics from both parents unite to form a new individual. To illustrate heredity through cell combinations, a series of cages of healthy guinea pigs, of different colors and with rough and smooth fur, show how these characteristics are transmitted and combined in successive generations. Photographs and charts show how the same results follow in human families. Moving models of the developed human being show the finished physical machine in its internal action. A life sized model of a man exhibits the circulation of the blood, a magnified heart pumping, showing the action of the valves, red blood flowing out through the arterial system and blue blood returned by the veins. A simplified mechanical reproduction of the digestive system portrays the absorption of food elements by the body.

Two moving models of outstanding interest display the physical mechanism of speech and thought. A model of the chest and throat shows the different characteristics that produce high or deep voices. A magnified model of a human brain shows the areas in operation in the acts of speaking, hearing, seeing or writing.

Botany

Marriage of plant cells is shown in action by an exhibit depicting gigantic dahlia stalk twelve feet tall. How food is produced in plants only in daylight is portrayed by a series of moving models of the cell structure of a corn stalk. Circulation through the cells of oxygen, carbon-dioxide and water vapor shows the plant breathing out oxygen while the combination of the water and carbon dioxide produces glucose. Two phases are shown, day and night. At night the plant gains size but food elements are formed only under sunlight and not by specific rays but the natural complete radiation of all the sun's rays.

How trees grow is shown by one of the most remarkable moving models in the Exposition. A section of a Basswood twig, magnified to seven and one-half feet in diameter, representing a branch three years old, adds a year of growth in seventy-five seconds, becoming nine feet in diameter by the accretion of new material.

Biology

Central feature of the section of marine biology will be the actual bathysphere in which Dr. William Beebe, the famous deep-sea explorer, descended to the depth of 2,200 feet, the steel globe being required to sustain a pressure of 1,000 pounds to the square inch. A model of Dr. Beebe's famous oceanographic ship, the Arcturus, will be shown afloat with reproductions of the special nets and pipe drags bringing up specimens from 3,000 feet. Sea and amphibian life of the present day, but presenting almost the characteristics of prehistoric ages, is to be shown in a diorama in color in three dimensions of one of the islands of the Galapagos group.

Micro-Vivarium

Considered by scientists one of the most remarkable exhibits in the biological section is the micro-vivarium. Microscopic marine life is shown in actual life enlarged thousands of times. Pin point drops of water are the theatre. Powerful microscopes will look through them and throw the living scene upon the screen, showing the weird and monstrous creatures swimming, eating, making love and fighting in their infinitesimally minute world. Comparative with this, a bacteriological laboratory will be in operation, showing the technique of science in rearing and studying bacteria.

Distribution of plant life over the globe will be shown by an illuminated glass map indicating in color the seven great vegetation areas over the world's land masses. Detail paintings of these areas will be shown in this section, featuring the dominant animal life with the characteristic plants of the regions, from arctic tundras to tropical jungles.

To sum up the field of knowledge covered by this vital department of science a Synoptic Review of Biology is planned by Dr. Jay F. W. Pearson, in charge of the Biology Section of A Century of Progress. By this display, making use of lantern slides and preserved materials, the subject will be rounded up in a brief survey of human knowledge of evolution at the present day.

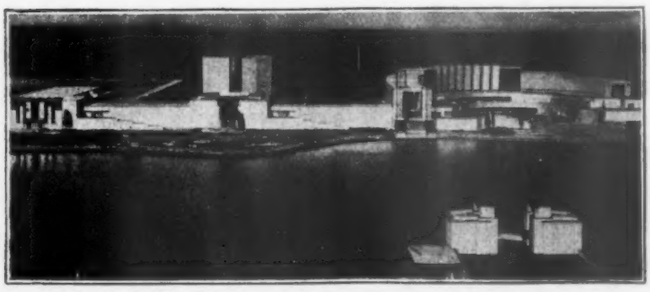
Physics

PHYSICS is the Aladdin's lamp which, during the past century, has brought electric power into home and factory to do the work of millions of slaves, has given us light without flame and heat without fire, and has enabled us to talk across oceans and to fly swifter than eagles. For without the fundamental knowledge physicists have obtained about the various kinds of energy and about the constitution and properties of matter and electricity, the remarkable achievements of most modern inventors and engineers would have been impossible.

At the Century of Progress Exposition, a series of automatically operating exhibits are demonstrating, in a clear and intensely interesting way, many of these fundamental phenomena and relations. These ninety exhibits are placed on the main floor of the Hall of Science just north of the Great Hall. They are arranged in sequence so that, when seen in proper order, they are equivalent to a series of experimental lectures covering the most fundamental physical phenomena. The exhibits will be placed on tables five feet high so that all who pass in front of each exhibit may see it before going on to the next. They will be clearly numbered so that they may be seen in proper sequence, and placards will be provided which can be read ten feet away.

The first group (Molecular Physics) will deal with expansion of gases, evaporation, refrigeration, etc. It will suggest answers to many questions in the general public's mind. How does the air in tires hold up so much weight? Why does steam exert such great pressure when in contact with heated water? How can electric power such as is used to heat electric irons and toasters, produce cold in refrigerators? The exhibits will not only demonstrate the pressure exerted by compressed air and steam, but include a working model with steel balls insteal of molecules showing how the pressure is due to bombardment of the walls by molecules which have the speed of rifle bullets.

The second group (Sound) explains nature of sound, including music and speech. Sounds are of great practical importance whether classified as speech, music, jazz or noise. The exhibits in the Sound section explain how sounds are produced, how sound waves travel; when resonance occurs, what determines the pitch of a sound, how speech sounds differ and how talking films reproduce sounds. The visitor sees a large tuning fork apparently vibrating very slowly through a large amplitude; he hears four tubes of different lengths ringing in succession and sees at the same time the image of the vibrating flames within the tubes, reflected by a rotating mirror as flaming saw teeth; he sees a magnified image of the sound track on a movie film and at the same time hears the corresponding sound. In the final exhibit of this group, speech sounds are transmitted on a light beam which the visitor may intercept if he wishes.



The Electrical Building, Century of Progress

The third group (Electricity) begins with a diorama of Franklin and his kite. Electricity, now our wonderfully convenient and efficient servant, was merely a curiosity a hundred years ago. Its astonishing development is demonstrated in a series of exhibits, which will explain the fundamental principles of the dynamo, transformer and motor. We do not know why an electric current affects a magnet or why a moving magnet may induce a current in a nearby coil; but the exhibits demonstrate these effects and show how modern electrical machinery makes use of them.

The fourth group (Valve Tube and Radio) explains radio broadcasting, the modern miracle, undreamed of thirty years ago. The key to the mystery is the valve tube. Exhibits demonstrate the action of the filament, grid and plate and show how sounds are amplified and how the continuous oscillations necessary for broadcasting are produced by use of such tubes. Spark signal sending and carrier wave sending are visually demonstrated.

The fifth group (Light) shows effects, nature and properties of light. By the use of lenses in telescopes and microscopes the eye is enabled on the one hand to see glories of the heavens, otherwise invisible, and on the other to study the minute structure of metals and microbes. The refraction or bending of rays of light by means of a lens is shown in an exhibit, also the way in which a lens forms an image. Another exhibit shows how eyeglasses correct defects of the lens of the eye. The beautiful colors of soap films tell us that light is a wave motion similar to radio and the frequency of vibration of green light is higher than that of red. An exhibit shows in a simple way how we know that the wave-lengths of light is about twenty millionths of an inch. The electric eye, the photocell, is a modern genie produced by scientific research. Exhibits show the fundamental phenomenon and also applications to the reproduction of sound. Without the photocell television would be impossible.

The last group ("Rays") deals with the various "invisible" rays. Physicists discovered the electron and the proton, building stones of all atoms. These tiniest of particles cannot be seen individually, but when given speeds of 100 to 100,000 miles a second they are

(*Continued on page* 158)

The Importance and Role of Visual Education In Our Schools*

W. J. HAMILTON

LIKE many progressive ideas, visual education has suffered from the extravagant claims of proponents more interested in the commercial than in the educational aspects of the subject. Like radio at the present time, visual education, especially the moving picture, has been heralded as a substitute for the teacher, the classroom instruction, and the organized school as we now know it. This over-statement of the place of visual education, has resulted in disillusionment and disappointment. Visual education has now passed the experimental stages. Scientific studies in education have corrected many of the disappointments found in the early years of the use of visual aids. The present finds us in a position to approach a solution of the problem of visual education in a sane and scientific manner.

There are at least seven significant aspects of visual instruction which come to mind in the consideration of the importance and the role of visual education in the modern school. These are but a few of many and are presented in the following order as being worthy of consideration by those in a position to study this interesting technic in education.

1—From the psychological standpoint, what is the status of visual education?
2—What is its place and function in our educational program?
3—What types of visual aids are now available for use in the schools?
4—What has experimental research contributed to the more intelligent use of visual aids?
5—How adapt visual education to the typical school situation?
6—Upon what basis can suitable visual aids be provided for school use?
7—What is the contribution of visual education to the ultimate ends of education?

(1) Students of psychology have in recent years given considerable time and attention to the study of visual perception. Extensive experimentation has not only determined the importance of visual perception in the general adjustment of the individual to life situations, but the elaborate studies of its relation to reading, to personality development, and to emotional stabilization, have made teachers more and more sensitive to its place in the psychology of learning.

Dr. Charles H. Judd has pointed out the fact that in the treatment of the general subject of perception, "educational psychology has emphasized vision more than any other sense." This is due first to the fact that the phenomenon of vision is more easily investigated than any other sense, and second, that vision plays so important a part in human experience. Quoting further from Dr. Judd we find that "On the practical side the importance of vision is obvious even to the casual student of human life. The animals depend in a large measure on smell and taste and touch to guide them in their contact with the external world. In human life the three senses mentioned sink into insignificance as compared with vision. The superiority of vision arises in part out of the fact that it is a distance sense, that is, it brings to the individual sensory impressions from remote objects, and thus facilitates deliberate reactions which can be formulated during the approach of the object. Further, the highly differentiated character of vision makes it possible to distinguish qualitative shades of sensation which permit the most minute adjustments of reaction. Hearing is a social sense and permits the developing human being to come into relations with his fellows. But hearing is not a suitable sense with which to explore the physical world, because bodies are for the most part emitting sounds. But all bodies are constantly reflecting light, and hence the importance of vision as a sense is greater than that of hearing."

(2) As to the place and function of visual education in our educational program, we have only to observe the extent to which the subject has received attention from all levels of instructional service. Since the days when Johann Comenius introduced his "Orbis Pictus" on down to the present time educationalists have been interested in the improvement of visual aids in education. Especially during the last century do we find a marked increase in the use of maps, charts, natural objects, models and other visual aids in classroom teaching. The introduction of scientific technic and the laboratory method of instruction have added greatly to the purposeful employment of visual technics. In the study of natural science we have constantly been confronted with the problem of bringing the pupil into personal contact with the thing studied in order that facts may be based upon primary evidence and first hand information. The success of the laboratory method in the teaching of science has been transferred to other fields of school work and the use of visual aids have been greatly extended. As a result of improved pedagogical methods visual aids have gained wider use, included a wider range of materials, and passed from the exclusive use for demonstration by the teacher to use by the pupils themselves. Observation of teaching practice in any progressive school will show a wide variety of use

*Address delivered before the Metropolitan Chicago Branch of the Department of Visual Instruction.

made of visual aids in laboratories, lecture rooms, museums, and general classroom situations.

(3) As to the types of visual aids, the question cannot be answered without attempting to define what may be accepted as a visual aid. In the broadest sense, a visual aid has been defined as "any device used to objectify and thus to clarify the impressions or thought of the learner." This will include anything from a field excursion to the presentation of photographic reproductions by the use of charts, stereographs, lantern slides, or moving pictures. In the literature of visual education we find four types or classes of visual aids, each having a distinct and definite place in the work of the school. These have been designated as:—

1—Objects themselves—which are actual, not representative.
—Sticks, tablets, mechanical instruments, chemicals, plants, shrubs, insects, models, etc.
2—Pictorial substitutes—which are representative of the actual objects.
—Photographs, lantern projections, drawings, etc.
3—Schematic representations—which represent only the essential qualities of objects for which they stand.
—Maps, globes, reliefs, scientific drawings, plans, diagrams, etc.
4—Symbolic substitutes—which are not like the objects for which they stand.
—Graphs, diagrams, curves, outline, stereograms, etc.

It is necessary that the teachers employing visual aids in instructional service shall be conversant with the aids listed and seek to become familiar with the methods to be employed in their use. Nothing is more unfortunate for the advancement of the cause of visual education than the misuse of the devices and materials available in the several fields.

(4) Mention has previously been made of the value of scientific studies in the field of visual perception. Studies by Freeman and others who have followed his line of investigation have served to clarify our thinking and have aided in the recognition of the educational values of motion pictures, and other visual aids in the classroom.

(5) Students of visual education now realize that visual aids must be used with intelligence and in accordance with the scientific findings now available. There must be a definite plan of procedure in the mind of the teacher, and the apperceptive background of the learner must be given careful consideration. The use of visual aids must be preceded by outlines and other forms of preparation to prepare the pupils for the understandings to be developed in the teaching activity. The teacher is still the most important factor.

The adaptation of visual education to typical school situations has been greatly aided through the extension of a knowledge of the character of visual aids, their place in the curriculum, and the values in using them. It has been necessary to devote much time and consideration as well as money to the preparation of visual aids suitable for classroom use. The problem that confronts the teacher is one of selection. Some of the materials offered for teaching service are of inferior quality and not well suited for the work in hand. Methods of distribution are as yet poorly developed. Outlines and aids to study are not carefully prepared. The technics of classroom presentation are greatly in need of development and refinement. It is thus to be seen that an extensive field of investigation and research is open to students of scientific education.

(6) The value of visual aids is large and the teacher of today has not begun to make adequate use of the resources in this field. Training in the ability to judge pictures and to evaluate other materials of visual instruction is greatly needed. The trained teacher will be able to select and use pictures intelligently. She must be able to determine the character of the picture and the manner in which it shall be used in the teaching period. This point has been well illustrated by an article in *School Progress,* a journal published by The Mankato State Teachers College, May 1932, entitled "The Use of Pictures as an Aid in the Teaching of Geography." The author, Mary Gwen Shaw, calls attention to the fact that "the selection of pictures to be used in a unit of work on geography must depend upon the use to which they are to be put. Pictures may be used in many ways. The following groups and examples illustrate what is meant."

a. "Pictures may be used to introduce and motivate a new unit of work. A picture showing the flat land, the long, built-up canals, and the windmills of Holland will interest the child so that he will wish to find out why the canals are higher than the surrounding land and what the windmills are for."
b. "As a part of the assimilative material which a child uses in obtaining the understandings of the unit, pictures are invaluable. It is very difficult, for instance, for the child in Minnesota, without being able to see the various steps by which the industry operates, to obtain an accurate realization of the importance of the banana industry in Central America. The statement that 'frequently within two weeks after the banana has been cut, we have it for breakfast' takes on new meaning when he can see the many processes thru which the banana must go during these two weeks."
c. "As checking exercises during the assimilative period, the use of pictures frequently introduces the play element into the lesson, thus avoiding inhibitions upon the part of some children who are unable to recite or discuss topics to advantage in the ordinary question and answer lesson."
d. "As a means of testing concepts in geography, pictures can be used very effectively either singly or in groups."

In the use of photographic materials in our own school system, there is a definite sequence in presenting the same to the class. Stereographs, lantern slides, film strips, and motion pictures are employed. The method of use is as follows:

a. The stereograph and other photographic materials are

used for study purposes during the assimilation periods. Their use is similar to that of a reference book and may be used in the library or in a classroom situation under the direction of the teacher in a teaching situation. Pupils are urged to study the stereograph in detail and ample time is given to meet the variation in pupil ability to grasp and understand impression gained thru the eye.

b. The lantern slide is used in situations of group review and is frequently placed in the hands of the pupils. This means that the pupils of the class, organized in working committees, select the slides, operate the projection apparatus, frequently prepare the slides by developing original drawings and diagrams, and explain the important understandings developed thru the study of the slide. The lantern slide is a splendid device for the review of units of work previously studied.

c. The motion picture is employed as a summarizing activity following the completion of the unit. By its use an integrated experience is provided and the relations of factual material may be observed in a natural setting.

It will be noted from the foregoing statement, that the several types of photographic materials are used with definite purposes in mind. Too often visual materials are presented as forms of busy work for entertainment purposes. It is to be regretted that this practice is so common.

One of the handicaps to the use of visual aids is to be found in the difficulty in obtaining the right kind of material. The Keystone View Company of Meadville, Penn., has greatly assisted in the solution of the problem in so far as the use of stereographs and lantern slides are concerned. Several producers have made available excellent and convenient material on film strips and an increasingly large number of teachers are making use of the same.

It is in the supply of the motion picture subjects where the greatest difficulty is to be found. Service organizations are in a position to supply certain types of motion pictures, many of the subjects having been produced by business corporations for advertising purposes. Some of these studies are valuable as educational subjects, others are of little or no value. We are all familiar with the Yale Chronicles and the new series of 16mm. films available through Eastman Teaching Films of Rochester. The most satisfactory method of film distribution for school work is to be found in the extension service which has been developed in several of the States. The larger cities have been able to organize and support their own film exchange, but the smaller communities must depend upon booking service.

(7) The romance of visual education is to be found in the fact that more and more the world is accepted as a laboratory. This can only be realized to the extent that it is possible to bring the learner in contact with actual world conditions. All pupils cannot travel to discover the knowledge of the world through adventure, but a wonderfully vivid experience is provided through the use of visual aids which brings the world into our school rooms and within the vision of our pupils. Out of this kind of education there will come attitudes of understanding and appreciation which may break down the deadly provincialism of the present social order. Out of it may come an intelligent interest in world problems, aiding citizens in the ability to rationalize upon the basis of an apperceptive background developed through visual perception.

Douglas Fairbanks, in describing the objectives and something of the technical difficulties incident to his presentation of "The Black Pirate," directs our thinking to the aesthetic values in the motion picture. He concludes with this paragraph: "I suppose I shall always be making romances which run toward the extraordinary and the extravagant rather than the 'realistic' pictures woven out of the homespun of every day life. Not only do I think that the romantic province particularly belongs to the screen, but that in the human mind there is always a flickering revolt against the stifling actualities of life and a desire to escape from them. You can say, if you like, that the real things of life are bread and how to win it, real estate, subway trains and the vicissitudes of domestic life. But I prefer to think they are the dreams we live with."

Upon the basis of the foregoing statement, we as teachers may find in the presentation of the motion picture in the classroom, an adventure in learning which borders close upon romance. It has frequently been reported that the late William Rainey Harper, first president of the University of Chicago, could teach Hebrew in a manner that would make it appear as a series of hairbreadth escapes. The romance and realism of visual instruction when intelligently selected and skillfully presented, will undoubtedly stimulate, motivate, and make vivid the teaching in the modern school. Visual education has arrived. It remains for the teachers to refine and utilize the resources available.

Sciences Demonstrated at Fair

(*Concluded from page* 155)

called cathode, canal, alpha or beta rays and produce effects which can be seen. Exhibits show luminous effects due to cathode and canal rays in vacuum tubes, also tracks of single alpha rays from radium, and the properties of x-rays which are produced when cathode rays strike a target. Finally a "hodoscope" designed by Dr. Johnson of the Bartol Institute will show the paths of individual cosmic rays by means of flashing neon lamps.

To watch each of the ninety physics exhibits go through its cycle of operations will take a visitor about two hours. In this time, any person will inevitably acquire a better understanding of the fundamental phenomena underlying some of our greatest industrial developments and a fuller appreciation of the debt of our present civilization to Basic Science.

The Versatile Lantern Slide

W. T. R. PRICE

INCREASE in the use of visual aids in our schools has naturally brought about an increase in available material. New pictures, charts, maps, models, stereographs, lantern slides, motion picture films, etc. are constantly being added to the collection.

There is, in fact, such a wealth of material that there has arisen some confusion and uncertainty as to just what visual aid might be best suited to the problem at hand. Some of the material is poor and should not be used at all, while some is well suited to specific purposes and should not be used for others.

A Central Source of Information

In passing, it may be noted that this condition points to the desirability of a central clearing house where visual aids could be listed and information regarding all types of equipment and materials be available. This should not be entrusted to a commercial concern, but should properly be under the control of an unprejudiced authority on visual education.

Certain kinds of visual aids require for their presentation more or less expensive apparatus which may not be within the school budget. Specifically, the motion picture projector, lantern slide projector and reflector come under this head. Wall maps and other visual aids are also often expensive in themselves.

The matter of sufficient funds to carry on an extensive program in visual instruction was a problem presented to Scarborough School at the beginning of the year. It was the opinion of the director that more definite results could be obtained by concentration on some one type of visual material which would cover the greatest number of requirements.

Importance of the Lantern Slide

Among the great variety of materials available for visual instruction, it is doubtful if any one can cover so great a field or lend itself to such varied uses as the lantern slide.

The scope of the motion picture is definitely limited to the portrayal of motion. The still film is limited to those subjects near at hand which may be easily photographed. Charts, maps, and other printed matter cover a limited field of subject matter which is governed more or less by the publishers. Actual objects or models of them cannot always be obtained, and in any case can be made to illustrate only a small part of the ever growing requirements of visual instruction. Within its limitations, each of these mediums has a distinct function in presenting to the student a certain kind of visual image, and it is not intended to underestimate their value or to assume that any one type of visual aid can be made to answer all purposes.

The lantern slide, until recently, has been limited in its technique almost entirely to photography, and there is available an enormous variety of valuable material of this character. A large proportion of these photographic slides is confined to historic scenes, depicting cites, buildings, ancient ruins, street scenes, interiors, etc. Another large group is concerned with photographing reproductions of objects of art—such as sculpture, paintings, and other material from museums and private collections. A smaller group, but one which is growing with the advance of visual instruction is the photographic reproduction of maps, charts and diagrams. There is also the school-made photographic lantern slide, which is in much the same class as the still film, except that it is somewhat more costly. Where a school is already equipped with lantern slide projection apparatus, this slide is a valuable addition.

It is probable that there is a lantern slide to fit almost any condition where a lantern slide could be used. The procurement of the particular slide, however, may present difficulties. This, again, points to the need for a central clearing house where such information could be obtained from an unprejudiced source.

It may be gathered from the foregoing that the lantern slide covers a wide field of information and that its proper use can be made to fill many of the needs of visual instruction. It was not this assumption, alone, however, which governed Scarborough School in the choice of the lantern slide as a medium of instruction on which to concentrate its attention. Quite recently a new type of lantern slide has come into prominence, and it is this new slide which has appealed particularly to the Scarborough faculty.

The Hand-made Lantern Slide

Here is a medium of expression for the student in which he may share with his fellow students, in a definitely dramatic fashion, his knowledge and his art. The making of a lantern slide and the projection of it on the screen before the teacher and the class carries with it a certain fascination which is productive of unusual effort—not only in artistic technique, but in the accurate portrayal of special study and research which may have been necessary for the accomplishment. The artistic effect of these efforts may or may not be altogether satisfactory from the adult point of view. In either case the study and research have been well worth while, and it is interesting to note that most of the student criticism is constructive and that ridicule of the

artist's efforts is very rarely in evidence. Contrary to expectation, a large proportion of the student-made slides present a creditable appearance on the screen and many are admitted to the permanent collection of the school.

Kinds of Lantern Slides

The following tabulation will summarize the foregoing remarks on photographic slides and indicate some possible subjects for hand-made lantern slides.

PHOTOGRAPHIC	HAND-MADE
(a) Professional	(a) Pupil-made
(b) School-made	(b) Teacher-made
SUBJECTS	SUBJECTS
(1) Pictorial Scenic Portraits, etc., etc.	(1) Original drawings (2) Copied drawings (3) Tracings (4) Lettered or typed (5) Mounted specimens (6) Superimposed colors (7) Anything that may be painted, etched or applied to lantern slide material.
(2) Reproduction Drawings, Maps, Charts, etc.	
TREATMENT Black and white, Tinted	TREATMENT Black and white, or Colored.

Referring again to the photographic slide, it is patent that many of the subjects treated could not be reproduced effectively in hand-made slides, even by an experienced artist. Their whole value from an educational point of view lies in the accuracy of photographic reproduction. A good photograph of a tiger, Raphael's Madonna or Hong Kong harbor is more convincing than even a very excellent drawing, and these subjects would most certainly present difficulties to the amateur.

While correct representation is desirable and often essential in the pupil-made slide, its greatest value lies in its ability to express ideas.

Some Advantages of Pupil-made Slides

(a) *Opportunity to express and share ideas.* By far the most important pupil-made slide is the original drawing in which the pupil expresses an idea and shares it with the class under ideal conditions. The usual distractions are removed with the darkening of the room and the attention of the class is concentrated on the screen.

(b) *Stimulation to research.* There have been numerous instances at Scarborough where pupils have improved their standing in certain courses entirely through their interest in making lantern slides.

(c) *No extraneous material shown.* In the pupil-made slide it is possible and desirable to present only such information as pertains directly to the subject. This is not always the case in photographic slides which may include distracting elements.

(d) *Drawings are perfected before presentation* A criticism of hand-made slides has been "Why not make the drawings on the black-board and save the expense and bother of projection?" The answer is that the black-board drawing is done under pressure. The work is hurried and often unsatisfactory, whereas the lantern slide may be done at leisure and perfected. Also, black-board technique usually comes off poorly in comparison with lantern slide projection.

The Teacher-made Slide

The functions of the teacher-made slide are similar to those of the pupil-made slide; the main difference lying in the better organization of material and improved technique, though slides made by students with artistic ability frequently surpass the efforts of the teacher.

The hand-made slide is extremely valuable to the teacher as a means of supplementing text-book material or other visual aids and covers a range from the simplest pencil diagrams or text to carefully executed maps in full color. It is safe to say that there is no subject in the school curriculum where the teacher-made slide could not be used effectively in specific instances.

Materials Used for Hand-made Slides

(1) *Pencil on etched glass.* The simplest slide is made by writing or drawing on etched glass with a hard pencil. The technique involved ranges from very simple line drawings made by six year olds in the first grade to intricate tracings and original works of art in the high school.

(2) *Black Ink on Clear Glass, Etched Glass, Protectoid, Traceolene or Cellophane.* Waterproof India Ink may with great care be used on glass, but it was found advisable to prepare ink specifically for this purpose. Ordinary drawing ink can be used easily on Protectoid and Traceolene.

Ink drawings are found practical for certain pupils in the fifth grade and higher. Protectoid ("non-flam" celluloid) is by far the most satisfactory medium for ink drawings and is much less expensive than etched glass. This material is available in both clear and etched surfaces. Interesting effects are obtained on etched protectoid by the use of a stilus. The pointed end of a knitting needle may be inserted in a pen-holder or other handle and used as a pencil. The effect produced is similar to that of a black-board drawing, though of more delicate contrast caused by the lighter background.

(3) *Color.* Black and white drawings, while excellent for certain kinds of work, leave much to be desired in many cases. Color is essential:—

(a) where it will aid in contrast or differentiation (such as in maps, charts, etc.).

(b) where it will aid in correct representation.

(*Concluded on page* 176)

GOVERNMENT ACTIVITIES IN THE VISUAL FIELD

CONDUCTED BY MARGARET A. KLEIN

A Filing System for Visual Aids

(Continued from May number)

V. The Photographic File

PHOTOGRAPHS are an important part of visual education. Especially are they useful in making posters and illustrating compositions.

Photographs and negatives may both be kept in the same file. When a new picture is received, it should be catalogued and one copy mounted on a guide card with the title and index number at the top of the guide card. Extra copies of the photograph should be placed in a large envelope and the caption and index number noted on the outside of the envelope. The negative should be placed in another envelope with the same information on the outside. Both envelopes should be filed in back of the corresponding guide card. The title and index number are noted on all copies of the photograph and also on the negative.

Every photograph should have a caption on the reverse side.

VI. Rubber Stamps

Rubber stamps will save considerable time in a visual education section. I should suggest the following selection as necessary for the proper functioning of the work:

1. Visual Education Division
   Rush Center,
   Colorado.
2. Collect
3. Shipment received by borrower
4. Returned-Examined-O.K.

Sometimes material is lent to an out-of-town borrower provided he is willing to pay transportation charges both ways. This arrangement necessitates the stamping of the shipping tags with the name and address of the visual education division in the upper left hand corner and the word "Collect" in the upper right hand corner.

When the acknowledgment form is returned to the division, shipping card is stamped "Shipment received by borrower."

As soon as the material is received in the office and examined, both the stock card and the shipping card should be stamped "Returned-Examined-O.K."

VII. Cards Used in the Various Files

For all files except the "material-information" file and the "photographic" file, the salmon-colored guide cards should be used for the main divisions, the blue guide cards for the subdivisions and the white 4 by 6 index cards for the stock cards and the shipping cards.

The regular large sized guide cards should be used for the materials-information file and the photographic file.

VIII. History of a Loan

The following outline is a complete resumé of a "loan" of visual-education material:

1. Reservation of material made.
2. Reservation noted on shipping card.
3. Reservation noted on stock card.
4. Shipping card filed in "Send" section of the Distribution File.
5. Material shipped on date scheduled.
6. Shipping card placed in "Out" section of the Distribution File.
7. Shipment letter sent to the borrower on same date as the material is shipped.
8. Acknowledgment form is inclosed with shipment letter.
9. Acknowledgment form received from borrower.
10. Notation made on shipping card "Shipment received by borrower."
11. Acknowledgment form sent to central correspondence files.
12. Shipment received in bureau.
13. Examined and report made concerning the condition of the material.
14. If material is all right, shipping card is stamped "Returned-Examined-O.K."
15. Borrower is notified of return of shipment and condition of material.
16. Report of attendance and other information about the material submitted by the borrower is typed on the reverse side of the shipping card.
17. Shipping card filed in the "Closed" file.
18. Notation made on stock card "Returned-Examined-O.K."

With this outline in mind let us make a shipment card so that we might "visualize" the procedure. The shipment card will be made as follows:

I. This is an illustration of how the shipping card is prepared when the reservation is made.

Black, Miss Mary	November 16, 1931
Rush Center, Colo.	
Diet No. 14	
Diet Health Habits No. 2	
Diet Standards No. 5	

Front view

Purpose: Health exhibit in schoolroom
November 23-25
Return date: November 30, 1931

Reverse side

II. (a) After acknowledgment form is received from borrower.
(b) After shipment is returned and examined.

Black, Miss Mary November 16, 1931
Rush Center, Colo.

Diet No. 14
Diet Health Habits No. 2
Diet Standards No. 5

Shipment received by borrower
Returned-Examined-O.K.

III. Reverse side of card after transaction is entirely completed.

Purpose: Health exhibit in schoolroom
November 23-25.
Return date: November 30, 1931
Shipment letter and acknowledgment form 11/16/31.
Comment: "The film was shown on three different days to about 1500 pupils. It is a very instructive film."
The posters were displayed in the halls and the pupils studied them carefully.
Report acknowledged 12/2/31.

NOTE: All illustrations on this page are smaller than the cards. Actual size of cards is 4 by 6 inches.

The May issue of the EDUCATIONAL SCREEN contained illustrations of the stock card which, with the illustration of the shipment card and the illustration of the temporary card for the shipping clerk, completely visualizes the entire filing system.

IX. The Temporary File for the Shipper

A small shipping card is made for this file with just enough information on it to enable the shipping clerk to collect the material and to check it when the material is returned. Usually the name of the person to whom the material is being shipped and the list of material is sufficient. To illustrate, in the case of the shipment sent to Miss Black, the following card, 3 by 5 inches, would be made out.

Black, Mary Nov. 16, 1931
Rush Center, Colo.

Diet Film No. 14
Diet Health Habits No. 2
Diet Standards No. 5

After the material is packed and shipped, the shipping clerk files the card in a small filing box. When the material is returned, he takes the card from the box, checks the material and replaces the card in the box for the time being. At the end of the month, the card is useful in reporting the number of shipments, after which it may be destroyed.

The extra card for the shipping clerk is not absolutely necessary as he could use the shipping card in the Distribution File, if he were an intelligent person and reliable enough to be trusted with the cards when out of the file. However, there is danger of the card being misplaced and also of it becoming very much soiled by handling in the shipping room. For these reasons, the small temporary shipping card is much better.

If you have kept the articles from this department, published in the April and May issues of the EDUCATIONAL SCREEN, you will have a complete filing system for your visual education department.

Principal Makes Weekly Use of Talking Pictures

Norman B. Hinds, principal of the Standing Rock Indian Boarding School, Fort Yates, N. D., has established a weekly program of talking pictures in his school. Mr. Hinds worked on this problem in the course, "The Talking Picture in Education," given last summer at Teachers College, Columbia University, by Dr. Max R. Brunstetter of the Research Staff of Erpi Picture Consultants, Inc. The afternoon showing in the schools is followed by an evening program for parents.

Contributors to this Issue

W. J. HAMILTON, Superintendent of Schools, Oak Park, Ill.

H. PAUL JANES, 407 Richey Avenue, West Collingswood, N. J.

MARGARET A. KLEIN, Children's Bureau, United States Department of Labor, Washington, D. C.

W. T. R. PRICE, Head Industrial Arts Department, Chairman Visual Instruction Committee, Scarborough School, Scarborough, N. Y.

VICTOR WEBB, Chairman Visual Instruction Committee, Public Schools, Little Rock, Ark.

DEPARTMENT OF VISUAL INSTRUCTION NOTES

CONDUCTED BY ELLSWORTH C. DENT, SECRETARY

Program of Chicago Meeting of the Department of Visual Instruction

July 5 and 6, 1933, Congress Hotel

President, C. F. Hoban, State Museum and Visual Education, Department of Public Instruction, Harrisburg, Pennsylvania.

First Vice-President, F. D. McClusky, Director of Scarborough School, Scarborough-on-the-Hudson, New York.

Second Vice-President, W. W. Whittinghill, Director of Visual Education, Detroit Public Schools, Detroit, Michigan.

Secretary-Treasurer, Ellsworth C. Dent, Bureau of Visual Instruction, University of Kansas, Lawrence, Kansas.

Local Chairman, Paul G. Edwards, Director of Visual Instruction, Chicago Public Schools.

Wednesday, July 5, 9:00 A. M.—Meeting of the Board of Directors.

First Session

Luncheon, 12:15 P. M., Wednesday, July 5

Theme: *Responsibility of Teacher Preparation Institutions for Visual-Sensory Aids Courses from the Standpoint of*

(a) A Superintendent of Schools—R. G. Jones, Superintendent of Schools, Cleveland, Ohio.

(b) President of a Teachers College—Albert Lindsay Rowland, President, State Teachers College, Shippensburg, Pennsylvania.

(c) A Teacher—Miss Elda Merton, Assistant Superintendent of Schools, Waukesha, Wisconsin.

Second Session

2:00 P. M., Wednesday, July 5

I. *What Minimum Realia (objects-specimens-models) May Be Assembled Without Cost or at Very Little Cost to School Districts in*

(a) Geography—Edwin H. Reeder, Associate Professor of Education, Teachers College, Columbia University, New York.

(b) Elementary Science—Mrs. Grace Fisher Ramsey, Associate Curator, American Museum of Natural History, New York City.

(c) Junior-Senior High School Science—Wilber Emmert, Director of Visual Education and Science, State Teachers College, Indiana, Pennsylvania.

(d) Social Studies—Daniel C. Knowlton, Professor of Education, New York University, New York City.

II. *What Recent Scientific Experiments Show with Reference to Visual-Sensory Aids* (A Summary)—
Frank N. Freeman, Professor of Educational Psychology, University of Chicago, Chicago, Illinois.

III. *Discussion*

Thursday, July 6, 9:00 A. M.—Visit to the Adler Planetarium, under the leadership of Nelson L. Greene, Editor, The Educational Screen, Chicago, Illinois.

Third Session

Luncheon, 12:15 P. M., Thursday, July 6

Presiding: A. G. Balcom, Assistant Superintendent of Schools, Newark, New Jersey.

Theme: *Visual-Sensory Aids and the Economic Situation from the Standpoint of*

(a) Producers—(A Symposium)

(b) Supervisory Officials — A. J. Stoddard, Superintendent of Schools, Providence, Rhode Island.

(c) Visual Education Directors — (A Symposium).

Fourth Session

2:00 P. M., Thursday, July 6

Presiding: W. W. Whittinghill, Director of Visual Education, Detroit Public Schools.

I. *Radio-Vision—Demonstration of a Typical Program*
Directed by Miss S. Naomi Anderson, Field Supervisor, Visual Education, Chicago, assisted by Station WMAQ, Chicago, Dr. William D. Johnson, Principal of Volta School, Chicago, and Miss Florence Evans, also of Volta School.

II. *Relating Visual-Sensory Aids to the Curriculum*

(a) A Unit of Geography and History, C. C. Barnes, Director of Social Science, Detroit Public Schools, Detroit, Michigan.

(b) A Unit of Reading—Mrs. Mildred Smith, Principal of Elementary Schools, Detroit, Michigan.

(c) A Unit of Elementary Science—Miss Mabel D. Vernon, Graduate Department, University of Chiacgo, Chicago, Illinois.

(d) A Unit of Junior-Senior High School Science—John A. Hollinger, Director, Department of Science and Visual Education, Pittsburgh, Pennsylvania.

III. *Business Session.*

A MESSAGE

To the National Education Association

From the World's Oldest and Largest Manufacturers of Motion Picture Projectors

It is gratifying that we are to be represented during the Convention of the National Education Association at Chicago, Illinois, in July, and again have an opportunity to show Simplex products to the members of this great organization. The National Education Association, collectively, and its members, individually, have been pioneers in the use of motion pictures for visual instruction and a large part of the progress made in this field has been due to their efforts. Recent surveys now confirm the facts they have acquired through practical experience and we are glad to have this opportunity to recognize the pioneer work of those who have for many years realized the value of motion pictures for educational purposes.

As the world's oldest and largest manufacturers of motion picture equipment, the International Projector Corporation has maintained a commanding leadership since the inception of the motion picture industry. The early users of motion picture equipment for professional as well as non-theatrical purposes to a very large extent depended upon Power's, Simplex or Acme Projectors and we have had some considerable part in the solving of their many technical problems. Although we have discontinued the manufacture of Power's Projectors thousands of theatres, schools, colleges, churches and public buildings throughout the world are still using these machines and protected in their use by our continued manufacture of genuine Power's parts.

In the manufacture of our noted products, Simplex Projector, Simplex-Acme Sound Projector and Simplex Pockette Camera, we continue those standards of manufacture and design created and maintained by this Company during the past quarter of a century. These standards are for your protection. It is unfortunate that so many fail to realize the importance of precision workmanship in the manufacture of motion picture projectors. These men, methods and materials, that so greatly contribute to the reputation we have established, are an assurance that Simplex Projectors will give better projection, are under all conditions more dependable and will give a greatly increased length of service. Simplex Projectors are made to exact standards, comparable only to those used in the manufacture of fine, scientific instruments, and we will be glad to have members of the National Education Association visit our plant so that we may have an opportunity to substantiate the claims we make.

The writer has been connected with this Company, in various capacities, for nearly twenty years and many others have been with us from ten years to over a quarter of a century. The manufacture of motion picture projectors calls for highly specialized knowledge and it is essential to have a thoroughly experienced personnel. Our personnel has the full understanding of the exacting requirements of the manufacture of motion picture projectors and we shall continue to produce and develop motion picture equipment on the highest possible plane regardless of conditions.

With the confidence based upon the facts which you have acquired through long experience and the findings of recent surveys, we firmly believe that there is to be a vast expansion in the use of motion pictures by schools, colleges and all educational institutions. Motion picture projectors are the working tools of motion pictures for visual instruction and we give members of the National Education Association a full assurance that they will receive from us complete cooperation in the splendid efforts they are making to utilize motion pictures as an essential auxiliary in their work.

Cordially yours,

Samuel R Burns

PRESIDENT

INTERNATIONAL PROJECTOR CORPORATION, NEW YORK

NEWS AND NOTES

CONDUCTED BY JOSEPHINE HOFFMAN

Interesting Movies at Fair

Educators in attendance at the N. E. A. Convention in Chicago, will have the opportunity of seeing over sixty movie theaters at the Chicago Exposition, according to the Educational Department of Bell & Howell Company, Chicago. These movie theaters range from the theaters of "Hollywood-at-the-Fair" where visitors can witness the making of regular professional movies, to educational and industrial film showings in the exhibits of commercial firms and railroads, and in displays made by a number of U. S. Government departments and several of the states.

For instance, Libby, McNeill & Libby show motion pictures giving a vivid idea of how various of their food products are prepared in different parts of the world. Among other progressive industrial companies using movies at the fair are the Union Carbide Company, International Harvester Company, A. B. Dick Company, Household Finance Corporation, Guide Lamp Company, Kerr Glass Company, Felt & Tarrant, Pittsburgh Glass Company.

The Rock Island and Illinois Central railroads are also showing interesting movies; among the latter company's films are two reels on Mexico, showing every day life and scenery of this picturesque country.

In addition to the film showings by exhibitors there is a daily program of educational motion pictures illustrating the physical and biological sciences in the South Lecture Room of the Hall of Science, arranged by the University of Chicago Press.

Sound Film Experiments and Reports

"Measuring the Effectiveness of Sound Pictures as Teaching Aids" is a detailed report of a comprehensive experiment conducted by Dr. V. C. Arnspiger,[1] Director of Research, Erpi Picture Consultants. This study determined first, the relative effectiveness of teaching with and without sound films and second, the relative importance of the various elements involved in the composition of a film.

Approximately 2400 pupils and 64 teachers in the public schools of five cities participated in this experiment. One-half of the classes, (the control group) were taught by the ordinary classroom methods, their teachers utilizing any visual aids they deemed desirable except the sound pictures. The other half of the classes (the experimental group), as part of their allotted class time, viewed sound pictures, each of which presented in ten minutes a vivid, realistc, and comprehensive survey of the unit studied. Instruction for each unit extended over a period of two weeks. Four natural science and four music units were studied.

The superiority of those groups taught with the aid of sound films over those groups taught the same subject-matter without the aid of sound pictures ranged from 18 to 34 per cent in the individual units. For the natural science units combined the superiority was 26%; for the music units combined, 27%.

The specific contributions to learning made by the sound pictures alone were determined by comparing the groups on those test items the answers to which were furnished directly or indirectly by the pictures as well as by the study units. On these test items the experimental or film groups exceeded the control groups by 52 per cent in the case of the combined natural science units and by 31 per cent in the case of the combined music units.

The study also pointed out that the most important elements of composition involved in producing an effective educational sound picture are the proper integration of audio-visual elements, a generous use of the "close-up," excellent lighting of scenes, and judicious repetition. Extraneous factors in a picture, even though inconspicuous, definitely detract from the good effects.

Dr. Arnspiger discusses a number of problems in the field of educational sound pictures which are important for future research. "These problems," he says, "will depend for their solution upon the co-ordination and integration of the work of the philosopher, the sociologist, the psychologist, the student of method, the subject matter specialist, the educational administrator, and the expert sound film technician. It will be through this co-ordination of effort that the educational talking picture will assume its proper position of usefulness in the field of education."

◆ ◆ ◆

Another study to determine the contribution of educational sound pictures in teaching natural science and music to large groups of pupils is being investigated by Mr. A. J. Stoddard, Superintendent of Schools in Providence, R. I. Fifth and sixth grade classes are being used in this experiment.

◆ ◆ ◆

Dr. Howard M. LeSourd, Professor of Religious Education at Boston University, is experimenting with the use of talking pictures in a program of character training. He has used a film which presents life situations involving distinctions in moral conduct, as a basis for discussion in groups of young people.

(*Concluded on page* 176)

1. Bureau of Publications, Teachers College, Columbia University, New York, 1933.

FILM PRODUCTION ACTIVITIES

The aim of this new department is to keep the educational field intimately acquainted with the increasing number of film productions especially suitable for use in the school and church field.

Anchor Line Releases Travel Pictures

Two new motion picture films have just been released by the Anchor Line which together provide the first really comprehensive travel film of Scotland available in the United States. The new films are *The Highlands of Scotland* in four reels and *The Lowlands of Scotland* in five reels.

For depiction of scenery and the actual life and customs of Scotland the new Anchor Line films are unequalled. The subject matter of the nine reels includes: Aberdeen, Dunkeld, Killicrankie, Culloden Moor, Inverness, Strome Ferry, Ben Nevis, Fort William, Pass of Glencoe, Loch Lomond, The Clyde, Glasgow, Dunoon, Cowal Gathering, Melrose Abbey, Edinburgh and other points of interest.

At the same time two additional reels have been released: *Northern Ireland* and *Northern England*.

Those who wish to arrange showings before local clubs, churches and similar organizations should make application to the nearest Anchor Line branch office.

The films are loaned without charge to responsible persons and on certain occasions the Anchor Line will provide an operator and full equipment. All the subjects are available in 35 mm. safety stock, and the Scottish films may also be secured in 16 mm.

Talking Picture Tells Use of Municipal Power

Showing how a municipally-owned electric system generates and distributes power for the stimulation of local industry, *Power and Industry,* a talking picture, has been produced for the Bureau of Power and Light of the City of Los Angeles by Metropolitan Industrial Pictures of Hollywood.

The film has already been given extensive theatrical and non-theatrical distribution in the territory served by the Bureau. During the first three weeks of circulation, the picture was played by first runs and seventeen subsequent-run theatres in the City of Los Angeles, and is now continuing to be shown in neighborhood districts. Also, by the use of portable sound projection equipment, the Bureau is exhibiting the film to group meetings of varied types of organizations throughout the territory.

The picture includes sequences which show the source and creation of electrical energy, construction activity at Boulder Dam, how power is distributed over an area greater than that of any other city, and how electrical energy at low rates adds to employment by encouragement of industry. Scenes were made showing typical industries, such as tire manufacturing, motion pictures, clothing, fish canning, lumber, furniture, oil, and retail and export trade. A descriptive talk accompanies the sequence of scenes.

Game Conservation Portrayed

The Department of Conservation of the State of Minnesota is releasing through Ray-Bell Films, Inc., four new one-reel films on Conservation of Wild Life in Minnesota. These reels are titled *Wild Plumage, Nimrods of the North, Trails of the Hunted,* and *Fishermen's Fortune,* and contain extraordinary scenes made in the state on various expeditions into the game country. Many scenes are in natural color, employing the Multicolor process. Beautiful color close-ups of the golden pheasant, black pheasant and other species of game birds are shown complete with the story of how wild life is being preserved in the state through the scientific management of the Game and Fish Division. The presentation of the films is made under the supervision of Wm. D. Stewart, the Commissioner of Game and Fish, and are booked through that department. Ducks, deer, moose and fish sequences are presented within the four reels.

Recent Industrial Subjects

From Field to Food is the title of a two-reel educational-industrial film produced by Ray-Bell Films, Inc., for the Minnesota Valley Canning Company of Le Sueur, Minnesota. This film, available in either 35 mm. or 16 mm., is a complete story of the growing and canning processes of peas and corn. The audience is taken through a modern canning factory where one million cases of corn and peas are canned each season by this company. Bookings can be secured through either the sponsor or the producer.

◆ ◆ ◆

DeFrenes & Company have recently produced two films in silent form, which are available for free distribution through non-theatrical channels.

The Full-Fashioned Knitting Machine (2 reels) shows the process of weaving the tiny threads into full-fashioned stockings. The film contains slow motion pictures and animated drawings of the formation of the loops and the narrowing device which gives the stocking its form. *The Home of the Full-Fashioned Knitting Machine* (2 reels) shows all details in the manufacture of the Knitting Machine itself.

They have also just produced a film entitled *Energy* on 16 mm. width with sound on film, but this is for distribution only for specialized audiences in the automotive trade.

AMONG THE MAGAZINES AND BOOKS

CONDUCTED BY MARION F. LANPHIER

School Executives Magazine (April) "Planning Instruction with Classroom Films," by Dr. George W. Hoke of Eastman Teaching Films, Inc., is a straightforward challenge to teachers. Further, the article presents clearly a specific method of procedure in a given film presentation, together with general conclusions rounding out this presentation. This article should be in every teacher's hands who wishes to use visual material intelligently and constructively.

The Christian Century (May 3, 10, 17, and 24th) Mr. Fred Eastman reports in a series of splendid reviews, entitled respectively "Your Child and the Movies," "The Movies and Your Child's Health," "The Movies and Your Child's Emotions," and "The Movies and Your Child's Conduct," the findings of that inestimable study made under the direction of Mr. William H. Short and his committee known as the Motion Picture Research Council, financed by the Payne Fund. The method of the study made and the wisely formed conclusions from a breadth of viewpoint and a depth of understanding rarely known furnish valuable reading to teachers, parents, and all those vitally concerned with the problems involved.

The author of this series has not confined himself entirely to the material of this research but has, in his comments, included "other sources for data wherever he felt pertinent material of equally authoritative value was available."

Quotation from any one or all of the series would present but disconnected and general commentary, but the editor again wishes to emphasize the importance of the forthcoming volume in school, church and home libraries.

New York State Education (March) Mr. Ellsworth C. Dent, of the Bureau of Visual Instruction, University of Kansas, discusses "The Value and Economy of the Film Slide" in the sixth article to appear in this Visual Instruction Series. Other names for this visual device are "film strips," "strip films," "film rolls," and "picturols."

The advantages and limitations of the film slide are set forth briefly and clearly. It is economical, both in cost of materials and in cost of projection equipment, and offers a simple method for home-made illustrative class material. Many and varied subjects are available from the commercial firms. Perhaps the greatest disadvantage, as the writer points out, is the limited amount of light which may be projected through the film slide. Another limitation is that the pictures are in fixed sequence.

(May) In this issue Mr. Daniel C. Knowlton of New York University discusses "The Motion Picture in Education," the primary advantage of which, he states, is that the element of motion is added to the strictly pictorial element. To appreciate its effectiveness as a teaching medium he suggests the instructor analyze the construction of an actual motion picture designed for school purposes, and cites one of the Chronicles of America Photoplays as an example.

Book Review

The latest contribution to the literature of the visual field is to appear this month—a book entitled *The Educational Talking Picture* from the pen of F. L. Devereux, Vice-President of Erpi Picture Consultants, published by the University of Chicago Press.

As modestly stated in the preface, this is a most welcome effort to "present preliminary solutions to some of the more important problems encountered in adopting the talking picture to the service of education." Six chapters deal with the experimentation already done, the fundamentals of production, and some further problems to be solved by future research. The remaining six chapters deal with the practical and effective utilization of film in educational procedures.

The invention, development and perfecting of a new machine may easily be a shorter process than the creation of adequate material for use with the machine. Film production for educational purposes is an extremely complex affair. There must first be organized research in curriculum content and trends and in current teaching procedure; before selection of material, preparation of continuities and the technique of actual production can begin. Throughout the entire process it is essential to integrate and harmonize the activities of the subject-matter specialist, the teacher, the continuity expert and the technician. The best use of such products in classroom is again a matter of continuous research and experimentation in the years ahead, which will in turn react upon and inevitably modify production as it is now operating.

Colonel Devereux's book is vastly informative, not only as to the principles and problems underlying a proper future development of the talkie for schools, but also as to the elaborate activities already under way in the field. He details the steps necessary in building a true teaching film; gives complete working continuities for films already produced and for others planned; describes the teacher's guides that must accompany each film; lists school equipment. In short, the field has here a completely detailed, comprehensive and authoritative treatment of a subject of supreme importance to American education now and in the years ahead—the Educational Talking Picture.

NELSON L. GREENE.

THE FILM ESTIMATES

Being the Combined Judgments of a National Committee on Current Theatrical Films

(The Film Estimates, in whole or in part, may be reprinted only by special arrangement with The Educational Screen)

Estimates are given for 3 groups
A—Intelligent Adult
Y—Youth (15-20 years)
C—Child (under 15 years)
Bold faced type means "recommended"

Below the Sea (Ralph Bellamy, Fay Wray) (Columbia) Sensational thriller about tragic hunt for sunken gold, with heavy-handed villainy, some thin romance, dull dialog, vapid characters—but also notable under-sea photography and some informational value. Certain thrills too strong for sensitive children.
A—Perhaps Y—Fair C—Doubtful

Black Beauty (Esther Ralston, Alexander Kirkland) (Monogram) The fine old sentimental story clumsily "modernized" by Hollywood. Children will find some interest in animal scenes, but unskillful direction, amateurish plot and continuity, some mediocre acting, stamp it as unintelligent production.
A—Crude Y—Passable C—Fair

Bondage (Dorothy Jordan, Alexander Kirkland) (Fox) Pretended preachment about supposedly fine heroine yielding to ridiculous radio-crooner, an utter cad. Depressing maternity home, baby dies, frenzied attack on matron, insanity trial, freed and salvaged by lawyer hero. Apes "Maedchen in Uniform" but aims at box-office.
A—Hardly Y—Unwholesome C—No

Cheating Blondes (Thelma Todd) (Capital) Twin sisters exchange identity so that one, a successful cabaret singer, can be free to marry and have a child. Subsequent complications include murder. Nobody cares when the silly mess is straightened out. Futile and absurd production.
A—Trash Y—Worthless C—No

Devil Commands, The (Alan Dinehart, Mae Clarke) (Columbia) Successful lawyer, with cultural background, becomes obsessed with mad passion for fiancee of another man—commits two murders, and almost a third—and some really good acting is employed in making the unpleasant mess.
A—Mediocre Y—Decidedly not C—No

Devil's Brother, The (Laurel and Hardy) (MGM) Absurd and hilarious burlesque-operetta. Incongruous mixture of Laurel and Hardy nonsense clowning, singing by Dennis King as the romantic bandit-chieftain, and Italian costumes and settings of centuries ago. Entertainment value uneven, but thoroughly laughable in spots.
A—Good of kind Y—**Amusing** C—Fair

Diplomaniacs (Wheeler & Woolsey) (RKO) Craziest stuff yet from these supposed stars, mostly stale, crude, labored and uninspired. Utter burlesque of Peace Conference at Geneva is central idea if there is one. Bad taste and vulgarity, some conscious but more unconscious, dominates.
A—Absurd Y—Cheap C—No

Eagle and the Hawk, The (Fredric March) (Paramount) Grim, realistic war picture, with natural tragic ending, showing revulsion of glorified aviator-hero to the killing business. Brooding brings suicide for hero. Sex element brief and unimportant. Fine acting by March makes strong anti-war argument.
A—**Very good of kind** Y—Good
C—Too strong

Elmer the Great (Joe E. Brown) (First Nat'l) Crazy farce. Small-town ball-player, impossibly conceited, crashes suddenly into big league ranks. Innocently involved in gambling scandal, he blunders out of jail in time to bat his team to world-series victory and win his country sweetheart. Overacted greatly but often thoroughly funny.
A—Depends on taste Y—**Amusing**
C—**Very amusing**

Eleventh Commandment, The (Marian Marsh) (Allied) Sensational stuff about desperate efforts of two unscrupulous crook-lawyers to get a fifty million dollar inheritance. Mistaken identities, false heirs, stolen evidence, murder, hokum, etc. Tries to capitalize recent case made notorious in the press.
A—Mediocre Y—Trash C—No

Fast Workers (Mae Clark, John Gilbert) (MGM) Raw, unpleasant mess of artificial thrill, crude sex and loose characters. Heroine a blase street-walker, hero a brazen, boorish, tough-guy steelworker. Hero's sideline is proving to his dumb pal that there are no "good" girls, which furnishes the "comedy."
A—Trash Y—Pernicious C—No

Fighting President, The (Composite Newsreel) (Universal) Well chosen newsreel shots from career of Roosevelt from beginning of his public life to Presidency. Well edited, good vocal accompaniment, presenting well-rounded and wholesome picture of worthwhile attainment by greatest national figure of the day.
A—**Interesting** Y—**Worthwhile** C—**Good**

Gambling Six, The (Ruth Hall, Grant Withers) (Freulen) Brave heroine inherits sporting father's instincts and racing stables, and at first carries on incredibly well. Finally gambles away her fortune, but marries the "right man" and happiness crowns her futile career. So stupid that it is probably harmless.
A—Stupid Y—Waste of time C—No interest

Girl in 419, The (James Dunn, Gloria Stuart) (Paramount) Police emergency hospital is background for lively action and suspense in gang murder mystery. Beautiful heroine innocently involved. Exposure of murderer and protection of heroine solved by Doctor's assistant through unusual twist at the end.
A—Perhaps Y—Mostly good C—No interest

Hell Below (Robert Montgomery, Walter Huston) (MGM) Submarine-war picture of 1918, notable for good acting and lively action, and decidedly entertaining. Stress of war again accounts for heroine-hero liaison, but romance is rather submerged in tense battle scenes, good comedy and extraordinary photography.
A—**Interesting** Y—Questionable
C—Very exciting

High Gear (James Murray, Joan Marsh) (Goldsmith) Race-driver loses nerve after smash, drives taxi to keep orphaned boy in school, and later regains confidence, of course. Simple, homely little tale, nothing in it outstanding, but with real human appeal and natural interest in racing scenes and boy's school life.
A—Hardly Y—Fairly good C—**Good**

I Cover the Waterfront (Claudette Colbert, Ben Lyon) (U.A.) Tough, California waterfront, gin-soaked melodrama about smuggling of Chinamen. Young reporter, trading usual insults with his boss in nasal slang, solves problem and wins heroine who is the big villain's charming daughter. Incredible story but some real human values.
A—Fairly good of kind Y—Doubtful C—No

International House (Peggy Joyce, radio stars, etc.) (Paramount) Feeble, far-fetched story about a television invention in China, built to parade well-known names and faces of screen and radio. Vulgar humor and suggestive wisecracks. Heroine has nothing to contribute but the notoriety of her name.
A—Absurd Y—Cheap C—No

Lily Turner (Ruth Chatterton, George Brent) (First Nat'l) More low-life character made heavily impressive by Miss Chatterton. She starts by marrying lying cad who is really a cheap vaudeville mountebank, then on to other lower and more sexy affairs—with happy ending dragged in to end the depression.
A—Hardly Y—By no means C—No

Made on Broadway (Rob't Montgomery, Sally Eilers) (MGM) Smart-aleck publicity expert leaves wife, is tricked by gold-digger whom he rewards by hoisting her to Follies stardom. Finally disillusioned, he goes back to worthy wife supposed still to love him. Montgomery's conceited "cuteness" getting tiresome.
A—Hardly Y—Unwholesome C—No

Out All Night (Zasu Pitts, Slim Summerville) (Universal) Largely copy of "They Had to Get Married" with added fine work of Laura Hope Crews as dominating mother-in-law who goes with newlyweds on honeymoon. Rather amusing farce-comedy dotted with some suggestive situations and dialog of doubtful taste.
A—Fairly amusing Y—Doubtful C—No

Peg O' My Heart (Marion Davies) (MGM) Hartley Manners' old play about Irish fisher lass who inherits fortune, goes to England, but finds money does not surely bring happiness. Close sympathy of father and daughter finely pictured. Irish atmosphere and song and dance appealing and amusing.
A—**Pleasing** Y—**Very good** C—Fairly good

Picture Snatcher (James Cagney) (Warner) Cagney in a typical role — rowdy, breezy, slangy, ex-gangster who decides to go straight and becomes unscrupulous photographer on unethical tabloid paper. Fast, exciting action involving gangsters, reporters, and police. Some suggestive scenes and usual rough tactics with girls.
A—Hardly Y—Better not C—No

Reunion in Vienna (John Barrymore, Diana Wynyard) (MGM) The clever, highly sophisticated Sherwood comedy carefully and faithfully screened. Holds much of the charm and wistful sadness of the original, even though hero is more Barrymore than Rudolph. Chief fault, that it was first played by Lunt and Fontanne.
A—Good of kind Y—By no means C—No

Song of the Eagle (Charles Bickford, Richard Arlen) (Paramount) Fine loyal German-American brewer loses son in war and faithfully keeps brewery closed until prohibition brings on bootlegging. Repeal of Volstead law and some strenuous fighting beat gangsterism and racketeering. Much human appeal and character value by Hersholt and Dresser.
A—Good of kind Y—Doubtful C—No

Story of Temple Drake (Miriam Hopkins) (Paramount) Brazen sex exploitation at its worst, showing "well-bred" heroine preferring bestial love of revolting and lecherous racketeer to marriage with worthy hero. Sordid, depressing stuff, still much tamed down from pernicious novel selected for screening.
A—Offensive Y—Pernicious C—No

West of Singapore (Betty Compson) (Monogram) More hectic tropical melodrama about young Englishman developing oil fields, smashing and lashing his way through all obstacles. Various villains and a faithless sweetheart finally drive him back to former mistress. Dull dialog and unhealthy conduct by entire cast.
A—Trash Y—Trash C—No

When Strangers Marry (Jack Holt) (Mayfair) Typical, sensational, tropic melodrama about engineer-hero building railroad in fever-ridden East Indies jungle against impossible odds. Heavy villainy, vacuous doll wife, evil-intentioned lover—but growling bravado of two fisted Holt overcomes all, as usual.
A—Stupid Y—Possibly C—No

Zoo in Budapest (Loretta Young, Gene Raymond) (Fox) Skillfully made picture about lonely boy, brought up in Zoo with animals his only friends, and orphan girl thrown by chance under his protection. Notable photography, charming boy and girl love story, with great human as well as animal interest.
A—**Fine** Y—**Excellent**
C—Very good though exciting

THE CHURCH FIELD

CONDUCTED BY R. F. H. JOHNSON

How to Illustrate Hymns With Pictures

H. PAUL JANES

MANY a church service in which pictures were used has failed, not because the pictures were so poor or because they were so crudely projected but because they were not appropriate. Either they did not contribute to the theme of the service or else the leader simply "jazzed" up the service by introducing a number of light songs, cutting out the sermon and putting on some random motion picture in order to "get by cheap." An inexpensive motion picture is not necessarily a cheap one but without intelligent planning any picture may be made to look cheap no matter how brilliant its theme and construction.

In previous articles in THE EDUCATIONAL SCREEN principles involved in using pictures in worship have been discussed. Keeping these in mind we may turn to the consideration of specific facts regarding the use of pictures to illustrate hymns.

Hymns selected for a worship service must be appropriate to the theme of the service which, before the hymns are selected, should have been expressed in a picture. This picture is called the theme illustration or picture. It is usually used with the prelude, which is selected to emotionalize it, and with other special musical numbers on the worship program. (See Bulletin 100—Revised. Westminster Press, Phila., 1933)

The Theme Picture guides in the selection of the hymns of which there are to be, let us say, three: adoration, theme and response. The general and specific principles which should guide in the selection of a picture to illustrate a hymn do not seem to vary with the type of hymn, or with its use in a service or with the service in which it is to be used. Years of experimentation indicate only a very few cases where the proper illustration of a hymn was not appropriate wherever the hymn was really appropriate.

Heretofore the principles involved in selecting pictures for hymns have been listed as three general and four specific. In this statement it has seemed more logical to discuss the same principles as four general and three specific. These principles should be memorized by any one who would make the most of his work of illustration.

General Principles

First, *only one picture should be used with a hymn and usually only one slide.* Hymns cannot be projected successfully with motion pictures because either the words will remain too long on the screen or else the congregation will sing too slowly and the words will be on the screen too briefly. Again there are exceptions. More than one slide has been used with a hymn rather successfully and hymns have been projected by motion pictures. In general this has not been very successful for very obvious reasons.

One of the most distracting features of many filmed hymns is the mechanical method of leading hymn singing. Jumping dots and waving hands have no place in a dignified worship service especially when they crowd out all significant illustration of the hymn —such methods are bad enough when pictures are not used. There are only two known ways to lead the singing of hymns in a dignified service of worship: by means of a choir or a musical instrument such as an organ or piano. In these cases either the musician at the instrument must know how to lead or else the choir director, who has previously trained his choir to sing the hymns, may lead the choir. The distraction of an individual mechanically directing the congregation must be discarded just as the seating of people in their pews during prayer or the singing of a hymn has already been discontinued. Communion between God and man should not be hindered by the introduction of mechanical distractions.

Why only one picture with a hymn—and why only one slide? More than one picture used in the short time of the singing of a hymn is distracting. Hymns are to be sung with meaning, not as vocal exercise. A good picture requires more than a moment of time to deliver its message. Again the elimination of distraction gives us the reason for using only one slide. Four verses can be used on a slide and additional verses are usually tiring. A long hymn is like a long prayer or sermon.

Often a hymn has more than one theme—it should not—and in this case the distracting verses should be eliminated. On rare occasions it is necessary to use more than four verses, in which case two slides must be used. If a dissolving stereopticon is used, then the distraction of shifting slides is eliminated and one slide may be used for each verse if convenient.

Some have complained that words of a lyric of four verses illustrated are too small to read. In that case use a larger screen. Recently a service was held in Second Presbyterian Church, Germantown, in Philadelphia, a church nearly 100 feet long. The words of the hymns were easily read but the screen was eighteen feet wide. Incidently a motion picture of beauty and brilliance was projected the same distance by a 16 mm. motion picture projector and the picture was over 16 feet wide on a cloth screen.

Second, *pictures used with hymns should have meaning in themselves or when associated with the words of the hymn.* Watt's Sir Galahad might be considered an exception but should not be used unless the story it is associated with is well known to the group singing. Unfamiliar pictures which depend upon unfamiliar stories or legends for their meaning should be avoided.

Third, *artistically good pictures should be used.* No amount of effort will correct the bad impression of a poorly executed artistic idea. Fortunately the feelings will guide in the selection of good pictures. If a picture is not satisfactory to you, do not use it.

Fourth, *pictures of Christ should be used with chronological hymns only—never with a prayer hymn.* Wise men have long since ceased to try to describe God in words. All efforts to picture Deity are just as futile. But it is just as logical to picture the humanity of the Lord as it is to describe it. Words are but symbols. In the mind they stand for a conglomeration of pictures and sounds known as images. The use of a picture of the Deity with a prayer hymn is avoided because: (a) such a picture may limit the conception of the Deity and (b) it may become an image or idol.

With the hymn "'Tis Midnight" by Tappan, one might use Hoffman's or Copping's "Christ in Gesthemane." With Croly's beautiful "Spirit of God, descend upon my heart" one can only illustrate the attitude of the singer of the hymn, or perhaps the text.

Specific Principles

Keeping the above general principles in mind let us turn to the specific illustration of a few hymns.

First, we may *illustrate the theme of a hymn.* Take Babcock's hymn: "Be Strong, We are not here to play, to dream, to drift." Obviously the theme is "strength" and there are many beautiful representations of strength among the works of the artists.

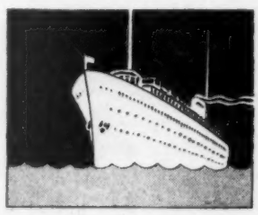
Second, we may *illustrate the attitude of the singer of the hymn.* Here one might use Pettie's "The Vigil" with Babcock's lyric, for in the figure of the young man pledging his sword at the altar we see not only ourselves in devotion but ourselves as a strong young man. Thus the theme and the attitude of the singer are both illustrated. Such a happy combination is stronger and more useful than an illustration involving only one of the principles.

Third, we may *illustrate the text of the hymn.* "Fairest Lord Jesus" (anon) may be illustrated with a picture of a mountain with trees and a meadow full of flowers in the foreground. Here the text is illustrated but also the theme, "beauty." This is far more effective than to illustrate "Where Cross the Crowded Ways" by North with a picture of Wall street looking toward Trinity Church in New York—the scene which is said to have inspired the hymn. And yet the latter picture is effective with the hymn.

These principles have been tested in hundreds of ways and throughout years of careful experimentation. They are not final, of course, but they represent the best we know at the present time.

DELIGHTFUL, ECONOMICAL CRUISES

A day . . . a week . . . or longer



To the Chicago World's Fair . . . to Duluth . . . via Great Lakes Transit Liners

This summer save money. Spend your vacation on palatial Great Lakes Transit liners. Visit the Chicago World's Fair. See Duluth, Enjoy sun-swept lounging decks, meals fit for a king, spacious staterooms at greatly reduced fares. Dancing and deck sports daily. A fine vacation for all the family. Ask about our Chicago All-Expense-Plan. Other cruises as low as $4.25.

7 Day Cruise	CHICAGO BUFFALO and RETURN	**$60** Including Meals and Berth Correspondingly low rates from other ports. (Railroad Tickets Honored).
9 Day Cruise	BUFFALO DULUTH and RETURN	**$75** Including Meals and Berth Correspondingly low rates from other ports. (Railroad Tickets Honored).

GREAT LAKES TRANSIT CORPORATION

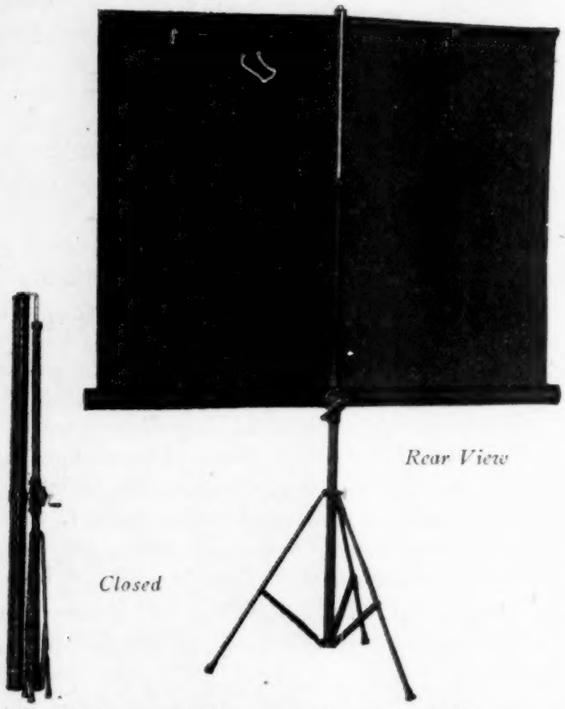
SS. Octorara, SS. Juniata, SS. Tionesta sailing frequently between Buffalo, Cleveland, Detroit, Mackinac Island, Sault Ste. Marie, Houghton, Duluth, Chicago, Milwaukee.

Automobiles Carried Between All Ports

For full information, apply any Tourist or Railroad Agent or J. F. Condon, P. T. M., 120 Delaware Ave., Buffalo, N. Y.

DA-LITE

Screens for Every Educational and Amusement Need



Rear View

Closed

The DeLuxe Challenger, illustrated above employs an entirely new principle for operating the larger size portable screens. Being of the combination metal case-tripod type it can be set anywhere. Can be folded in a very light, compact unit. The screen itself is easily raised to its full height by means of a small crank. Largest size—6' x 8'.

The DeLuxe Challenger is only one of a wide variety of portable screens produced by Da-Lite. There's a Da-Lite model for every specific need at a reasonable price.

See your dealer or write direct for full information.

Da-Lite Screen Company, Inc.
2723 NORTH CRAWFORD AVE.
CHICAGO, ILLINOIS

New Units in Geography

By Zoe A. Thralls

Assistant Professor of Geography
The University of Pittsburgh

Twenty-five Stereographs and Lantern Slides to Each Unit

Another Step Forward in Visual Instruction.

Units Based on the Recommendations of the *Thirty-second Yearbook*.

Each Unit a Complete Treatment of the Subject Covered.

Excellent Manual, with Descriptive Material, Teaching Suggestions, and References, Prepared for Each Unit by the Author.

Further Information Furnished on Request.

Keystone View Company
MEADVILLE, PENNA.

SCHOOL DEPARTMENT

CONDUCTED BY DR. F. DEAN McCLUSKY

Director, Scarborough School, Scarborough-on-Hudson, N. Y.

Little Rock's Use of Stereographs and Slides

VICTOR L. WEBB

FOLLOWING a survey of the use of the Keystone 600 and 300 sets of views and slides in the schools of Little Rock, it appears that the following suggestive procedure may lead to their more effective use.

1. *Scopes*—Only a few scopes are needed in each room, from 2 to 5.
2. *Number of Pictures*—Only a few pictures, seldom over five on any one subject being studied by a class, should be available at one time.
3. *Choosing the Pictures*—The pictures may be chosen just as supplementary books would be chosen if they were kept in a library. Choose them at the beginning of the work on the subject, topic or project.
4. The Social Studies teachers have the list of numbers given for each country and other teachers have lists they have made from time to time. It would be profitable to make a list of pictures available for subjects that will be studied during the next month of two.
5. *Presenting to Class*—This will vary just as the presentation of any supplementary material will vary.
   a. Recommend the pictures.
   b. Make the pictures a part of the assignment.
   c. Assign pictures to certain pupils for special reports.
   d. Place on the reading table, desk, or case with the scopes to be used during study period the same as other supplementary material.
   e. Train pupils to see what is in a picture.
      (1) By asking questions.
      (2) By having observations written down.
   f. When the pictures are valuable enough to warrant the procedure use them as the basis for the lesson. However, it is seldom that a lesson can be made on a few pictures.
6. Making use of the material by the children—is the same as with any other part of the assignment, or other supplementary material. The pictures in the textbooks are valuable, and should be used as parts of the assignment. Use these pictures the same way.
7. What pictures to use in the auditorium on visual instruction day. The classroom teacher owes an obligation to the auditorium teacher to give her a list of the slides to be shown. This can be done by a monitor.
8. Discussion of pictures in auditorium. The pictures should be discussed and explained by the children with the help of the teacher. The language on the cards is too difficult for most children. It is wise to ignore them or at least require that the pupils report in their own language. Spontaneous discussion is best anyway.
9. If you have a lantern but no auditorium, use it once a week or two weeks in the classroom showing the slides of the same views as used in the class time.

◆ ◆ ◆

The College of Engineering, New York University, is conducting an investigation on the value of visual instruction aids, especially 16 mm films, in that phase of the educational field.

Wholesome Films Service
Inc.
Specialists in selective film service
SILENT and SOUND
for
Church, School, Club, Y.M.C.A., Home and Community Center
Serving The Entire United States
THE MOST COMPLETE LIBRARY IN THE COUNTRY
of Educational, Religious, and Entertainment SILENT films on 35mm safety standard stock.
FOR SALE — RELIGIOUS AND EDUCATIONAL SUBJECTS ON BOTH 35 AND 16mm STOCK.
Also Portable and 16mm Projectors
Distributors of PATHE Silent Entertainment and Educational Films, including the Science Series edited by the Divisions of Anthropology and Geology and Geography of Harvard University.
48 Melrose Street **Boston, Mass.**

FOR ONLY $3.00 A YEAR
Our special club plan offers fine 16 mm. educational and entertainment films for individual or group showings.
For further particulars write
ASSOCIATED FILM LIBRARIES, Inc.
190 N. STATE ST. CHICAGO, ILL.

What talking pictures can do for education — and how to use them in the classroom—
is told by the man who has, perhaps, done more than any man in America to develop this modern instructional medium—in this **new book**

THE EDUCATIONAL TALKING PICTURE
By FREDERICK L. DEVEREUX
Vice-president, Erpi Picture Consultants, Inc.

An extensive review of past experimentation, suggestions for future research, and practical help to administrators, supervisors and teachers for setting up local programs of audio-visual instruction.

Illustrated. ***$2.00***

The University of Chicago Press

Historical Photographs

The two pictures below, greatly reduced from their actual size, are samples from a new series of still-picture sets, designed expressly for teaching purposes in schools. The photographic prints are 8x10 inches, average 15 to a set and are dry-mounted on heavy board to ensure an absolutely flat picture for handling in classes or on reference tables. This feature also makes for maximum ease in filing, economy in filing space, and assures minimum effort in selecting the picture or pictures desired for use on any given occasion. Each set comes in a separate, labeled carton of convenient size and shape for handling or filing.

Technically these pictures are a delight to the eye of both teacher and pupil. They are the work of Hollywood's most expert photographers, using the finest still cameras to record the finest moments of action and background throughout the entire process of motion picture production. Tens of thousands of such "stills" have been produced in connection with the making of motion pictures from the beginning to date. The critical and painstaking selection, from this vast store of photographic art, of subjects thoroughly suitable for educational purposes, is the task undertaken by Educational Research Studies, Ltd., Hollywood. The sole purpose of the company is to make available to the teaching field picture-material of a quality and range obtainable from no other source in the world.

The crucial point is, of course, the selection of the right material from such a mass. Most of the action and setting of the theatrical movies is of no educational value, to say the least. An examination of the pictures so far issued will satisfy on this point. The merely sensational or striking have been sedulously avoided, close-ups are generally eliminated and no reference whatever to the movie from which the still derives appears on the finished picture.

Four sets are now ready, of about 15 pictures each —*Roman Life, The Westward Movement, The Revolution and Organization of Government, and The Civil War Period.*

School Installs Sound Equipment

The Alamo Heights High School of San Antonio, Texas, has recently installed talking motion picture equipment to be used in connection with the various courses of study. Purchase of the equipment was made possible with the aid of the Parent-Teacher Association of the school. This organization plans to put on Friday night shows, the proceeds of which will help pay for the equipment. Pictures for these entertainments will be selected by a committee to insure obtaining suitable subjects.

Your Guide to the Biggest and Best in Current Motion Pictures!

Now Available!

"The Fighting President"

A 6-reel feature of timely interest and educational value. Recommended by the National Film Estimates as follows:
"Well-chosen news-reel shots from career of Roosevelt from beginning of his public life to the Presidency. Well-edited, good vocal accompaniment, presenting well-rounded and wholesome picture of worthwhile attainment by the greatest national figure of the day."

Also

The screen story of Franklin Delano Roosevelt's INAUGURAL. History in the making—the event of the Century, in 16 mm. silent only.

"The Voice of the Vatican"

A one-reel, sound-on-disc, picture showing the high lights of Vatican City, scenes of the Basilica, the new Vatican railway, the governing offices, the Pope's office and incidental departments. You see and hear the famous bells of Vatican Square. You see the Pope, for the first time, meeting the actual ruling head of a government when he greets Mussolini and Victor Emmanuel. The lighting of St. Peter's Cathedral is also shown.

Write for information
Non-Theatrical Department, Bureau B

Universal Pictures Corporation
730 Fifth Avenue New York, N.Y.

SEE your subject taught the "Picturol way" in Booth C-4

Stop at Booth C-4, N.E.A. Convention. Ask our representative to demonstrate the Picturol Projector with a film on the subject you teach.

S.V.E. Picturol films and slides include the following subjects—Civics, nature, geography, literature, physics, hygiene, history, music, art.

The Picturol Projector is being used by many schools to supplement oral instruction. Pupils are enthusiastic over this modern method of teaching. Knowledge which passes through the eye is not easily forgotten!

Five pertinent facts of Picturol Projectors and Films

1. S.V.E. Picturol films ("stills" on film strips) are used with Picturol Projectors.
2. Films projected on screen or blackboard.
3. Pupils' response increased; their interest intensified—improved grades result.
4. Projector is light, portable, easily operated.
5. Picturol Projectors range from $14 to $48.

Also S.V.E. motion picture film library available (16 mm and 35 mm width). Films for purchase or rent.

Let us help you persuade your school board! Literature on request. Address Dept. 663.

SOCIETY FOR VISUAL EDUCATION, INC.
Manufacturers, Producers and Distributors of Visual Aids
327 SOUTH LASALLE STREET, CHICAGO, ILLINOIS.

The Versatile Lantern Slide

(*Concluded from page* 160)

(c) where it will increase interest or appreciation through better artistic value.

The psychology of color is far reaching and must not be over-looked in Visual Instruction where everything depends upon making an impression on the mind through the eye.

"The human eye loves color. Whether they know it or not, all people react or respond to the influence of color. The degree of this reaction varies greatly—but all are susceptible to its influence. Color has power to attract attention, to stimulate emotion, to cheer and animate, or to quiet and subdue."—(Bonnie E. Snow and Hugo Frochlich in "The Theory and Practice of Color.")

At this point the first serious problem arose in the making of lantern slides at Scarborough. No color could be found that would work satisfactory on glass or cellophane. The Japanese transparent water colors which are so effective on photographic emulsion would not stick to the glass and were not even satisfactory on glass specially prepared with gelatine or other solutions.

The faculty committee on Visual Instruction, after some chemical experimentation, finally evolved a brilliant transparent color which was dubbed "Scarborite." This material in seven colors and white can be used on clear glass, etched glass, cellophane, Protectoid, Traceolene, or practically any surface. It dies quickly and is easily removed with a special solvent. It is permanently transparent, water-proof and has withstood the heat and light of a 500 W. projector for a continuous period of two hours without disintegrating or changing color.

Scarborite color opened up a new world to the lantern slide makers at Scarborough, and many beautiful slides in full color have resulted.

The superimposed color slides listed under "Kinds of Slides," were made possible and it is believed that this feature may be of practical use in the study of color. Two slides are made with blocks of primary color so arranged that when one slide is moved over the other, the colors will blend. The over-lapping yellow and blue will fade into green, red and yellow into orange, etc.

A successful set of slides has also been made to illustrate the three color process. Three slides were made in yellow, blue and red respectively. These were superimposed on each other in pairs and finally all together, resulting in a finished picture with all of the color shades of a three-color print.

The making and using of lantern slides took on such proportions that the demand for projectors soon became greater than the supply, and it was found that several classes frequently needed the same lantern at the same time. The Director had expressed a hope at the beginning of the year that each class might eventually have its own projector —and this hope has been almost realized in a period of eight months. There are now fifteen lantern slide projectors in the school. A few were bought new, some used or rebuilt and some were made at the school from stray parts. All of the class rooms are equipped with dark window shades.

Summary

Some of the more important advantages of the lantern slide as a visual aid are as follows—

1. Wide range of material already available.
2. Wide range of hand-made material possible.
3. Supplements many types of instructional material.
4. Induces pupil expression.
5. Induces pupil participation.
6. Dramatic presentation.
7. Ideal concentration.
8. Ease of manipulation.
9. Small storage space.
10. Small cost.

The value of the lantern slide as a visual aid has been forcibly demonstrated to the faculty of Scarborough School during the present school year, and it is hoped that the material presented in this paper may be of benefit to others who are experimenting along similar lines.

News and Notes

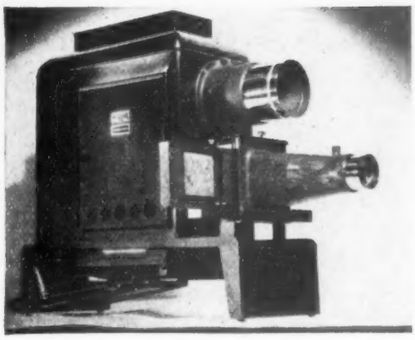
(*Concluded from page* 166)

Results of the recently completed Harvard experiment with talking motion pictures, sponsored by the Carnegie Foundation for the Advancement of Teaching, indicate that children taught with talking films learned one-fifth more than those taught without films.

The films were supplied by J. A. Haeseler, Director of the University Film Foundation, an organization associated with Harvard University and devoted to the production of scientific and educational motion pictures. Certain films produced by Erpi Picture Consultants were also used.

The study was conducted by Dr. P. J. Rulon, of the School of Education, with three groups of ninth grade pupils equal in previous instruction in general science and in their scores on a standardized test in the subject. One group, the "control group," studied the textbook in the usual manner. The second group, the "film group," studied the same text, but for fewer hours per week, devoting the remaining time to looking at films illustrating the text.

In tests given immediately after the six weeks period of instruction, the film group exceeded the control group in its total score by 20.5 per cent. In tests given three months later the film group exceeded the control group by 38.4 per cent. Dr. Rulon's final report will be published during the year as one of the Harvard Studies in Education.



The LRM Balopticon

FOR ALL AROUND ECONOMY

LRM BALOPTICON

See it at the Century of Progress

HERE'S an instrument that earns the right to be on every budget—no matter how restricted. It can do the work of three different types of still projectors for it projects clearly and sharply both slides and opaque objects and with a special attachment that is available (cost extra) projects strip film.

Outstanding members of the B & L line of Balopticons will be featured at the B & L Exhibit in the Rotunda of the Hall of Science at the Century of Progress. Here you will see the many B & L instruments that will enable you to carry out your program of visual instruction in keeping with today's budgets and with maximum efficiency.

Make the B & L Exhibit your headquarters when at the Century of Progress. You will find more than enough money saving and efficiency increasing ideas to amply repay you for your time.

A Hall of Science Feature — The B & L Exhibit

1933 A CENTURY OF PROGRESS CHICAGO

BAUSCH & LOMB

BAUSCH & LOMB OPTICAL CO.
688 ST. PAUL ST. ROCHESTER, N. Y.

B & L GLASS IS USED IN B & L MICROSCOPES, TELESCOPES, BINOCULARS, SPECTACLE LENSES AND FRAMES OPHTHALMIC APPARATUS, SCIENTIFIC INSTRUMENTS.

Educational Films

16mm & 35mm

All On Safety Stock

Extensive Libraries

of

Free and Rental Subjects

SCHOOL COURSE FILMS
SPORTS
SCENICS
COMEDIES

Regular Schedules for Full School Year Arranged for Your Approval

Write for Your Copy of Our New 1933-34 Edition of "Selected Motion Pictures"

Y.M.C.A. Motion Picture Bureau

347 Madison Ave. New York
19 S. LaSalle St. Chicago

FOLLOWING THE NEW TREND
For Better Quality Visual Aid Material

EDUCATIONAL RESEARCH STUDIES

were selected from
Historical Motion Picture Stills
Edited for Visual Aids
By an Advisory Board of Directors of Visual Education
And are offered
For Educational and Library Use
Covering the following subjects:

WESTWARD MOVEMENT
ROMAN LIFE
CIVIL WAR PERIOD
AMERICAN REVOLUTION AND ORGANIZATION OF GOVERNMENT
Others in preparation

Each group contains about 15 8x10 photographs dry mounted 9¼x11, boxed, with introduction and full descriptive text on each picture.

The material offered is of historical accuracy and high photographic quality and is made available by us through the exclusive co-operation and courtesy of the Motion Picture Producers and Distributors of America, Inc.

Write for prices and descriptive folder to:

Educational Research Studies, Ltd.
5537 Hollywood Blvd. Hollywood, Calif.

AMONG THE PRODUCERS

Where the commercial firms — whose activities have an important bearing on progress in the visual field — are free to tell their story in their own words. The Educational Screen is glad to reprint here, within necessary space limitations, such material as seems to have most informational and news value to our readers.

Bausch & Lomb Exhibit at Fair

It is doubtful whether any single group of instruments has contributed as much to the last century of progress in science as have optical instruments. The exhibit of the Bausch & Lomb Optical Co. therefore takes an important place in the Hall of Science at A Century of Progress.

Designed by America's foremost industrial designer, Mr. Walter Dorwin Teague, the exhibit is modern and dignified in its conception. In and on its silver and black cases, pillars and tables will be assembled the most comprehensive display of optical instruments and products ever attempted by any optical company. Some of these instruments will be on demonstration and others will be set up for the visitor to see.

Two particularly interesting features of the exhibit will be huge models of a pair of eyeglasses and a microscope. The microscope, standing 7 feet high, is to be mounted on an attractive revolving platform and will occupy a commanding position in the exhibit. Every one of its parts duplicates in magnified proportions the standard instrument. The giant eyeglasses feature the new Loxit mounting developed by Bausch & Lomb which eliminates the use of screws.

Every division of the extensive B. & L. line of optical products will be shown, including intricate research instruments which never before have been displayed at a public exposition. Not only microscopes will be shown, but also representative types of those many instruments which have played such an important role in the dramatic progress of industry and science during the last one hundred years. Accompanying each instrument will be a card explaining its use, and in many cases photographs of what is seen through the instrument will be shown. Around the back of the Bausch & Lomb Exhibit will be a photographic mural depicting the use of optical instruments in science and industry. There will also be a long panel of interesting photomicrographs made under exceptionally high magnification, which will be of interest to the layman and scientist alike.

In addition to B. & L.'s prominence in the Hall of Science, the Rochester institution will be identified with the Exposition in many other ways. Observation towers in the great Sky Ride, one of the most spectacular features in the entire fair, are to be equipped with B. & L. Telescopes.

Nearly half a hundred of their Coin Operated Telescopes will be located at points of interest throughout the fair grounds. Besides in its own booth where several Automatic Balopticons will give projected continuous stories of different phases of optical manufacture, Balopticons will also be found in service at many of the booths of other manufacturers and in prominent instructive roles in the exhibits sponsored by both educational institutions and state governments. Photomicrographs, made by Bausch & Lomb instruments, will be found telling the "inside" story in many educational and manufacturers' exhibits.

New Bell & Howell Equipment

The Filmo 70-E, an all-purpose personal movie camera at a moderate price, has just been announced by Bell & Howell. It has four indicated film speeds, 8, 16, 24 and 64, and is equipped with a Cooke one-inch F 1.5 lens and a 216 degree shutter, giving it six and one-half times the speed of ordinary F 3.5 cameras. The super speed feature will be just the thing for football, baseball, tennis, and other sports, and for taking industrial pictures, as, for example, time and motion study shots. It permits taking pictures indoors with a minimum of light, or outdoors at super speed even in poor light. The F 1.5 lens is fine for Kodacolor, also, and is instantly interchangeable with other special purpose lenses.

Bell & Howell has also recently brought out a new Filmo projector, the Model R, complete with such fine features as 500-watt illumination, automatic power rewind, reverse switch for running film backwards, clutch for still projection, manual framer, etc., yet selling in the moderate price range. 300-, 400-, and 500-watt 105- to 120-volt lamps may also be used with this model.

◆ ◆ ◆

Another development in this firm's line is an attachment for use with a Bell & Howell 16 mm. motion picture camera and any ordinary microscope for taking microscopic pictures. The device consists of a horizontal tube mounting a split-beam prism which deflects about 90 per cent of the available photographic light in a parallel ray, into the regular standard 1" F 3.5 camera lens, which remains set at infinity. The remainder of the light passes up the microscopic tube, set at 160 mm., over which fits a finder-sleeve fitted with a mask which shows the user the limits of the field being photographed by the camera. This reduced amount of light reaching the eye makes it easy to observe the object that is being photographed and to keep it in sharp focus by means of the fine adjustment of the microscope itself. An adjustable camera stand raises and lowers the camera.

Sound-on-Film Animatophone on Market

Victor Animatograph Corporation announces the appearance of the new Sound-on-Film Animatophone. Notable features of this model are its simplicity and its compact arrangement. Threading and operation are no more complicated than with a silent projector. The Sound head is side-mounted on the support base of the projector and occupies a space of only 2½"x 4¼"x6". The highly developed amplifier is mounted at the rear of the projector and occupies little space. Auditorium speaker and 50 foot cord are housed in a removable side of the projector carrying case. The entire equipment in carrying case weighs only fifty pounds.

Several optical, mechanical and phonetic features have been developed which have made possible clear sound reproduction and picture illumination. The high frequency range which has been attained appears to be a particular source of pride to the makers.

It is understood that this initial model of the S-O-F Animatophone may be followed with a "Blimp" model, and possibly a combination model which will include the sound-on-disc equipment of the original Sound-on-Disc Animatophone. The Animatophone will run silent as well as Sound film.

◆ ◆ ◆

Reverse action will be included as a regular feature of the Model 5 Victor Camera henceforth with no increase in price. It is also available to present Victor users. This feature permits the film to be backed up for making lap-dissolves or double exposures. Both feed and takeup reel shafts are power-motivated and equipped with friction clutches. Film action is reversed by means of a hand crank, which facilitates counting of film frames.

A Circulating 16 mm Film Library

Among the unusually rapid growing branches of the advertising industry was its adaptation to radio broadcasting. The advertisers were quick to recognize the unusual advantages gained through sponsoring radio programs and reaching the buying public at a time when it was assembled for relaxation.

Today sponsored 16 mm. films place various educational and entertainment reels within the reach of homes and various groups owning 16 mm. projectors. The Associated Film Libraries, Inc., of Chicago for the past fifteen months have been actively engaged in this field. They have gathered together many fine educational and industrial films and completed the much-needed idea by adding comedies, scenics, sports and other entertaining reels.

The library is sustained by the various advertisers who pay a nominal yearly sum for the care and distribution of their films, and a small fee of $3.00 per year is charged to each library member.

For Screen Projection

Write for free samples.

RADIO-MAT SLIDE CO., Inc.

1674 Broadway, New York, N. Y.

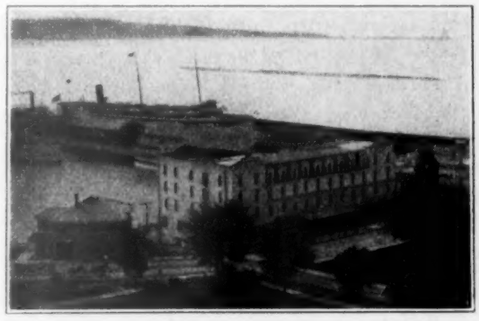
Many of the leading industrials of the country, including such organizations as Westinghouse, General Electric, Atchison, Topeka & Santa Fe Railway, National Carbon Company, and others have taken advantage of the distribution that the Associated Film Libraries, Inc., offer. Public, private and parochial schools as well as many churches, social groups, boys' clubs, etc., are using the service of the Associated Film Libraries, Inc. The time will come when such an organization will be national in scope and distribution will be available in leading cities throughout the United States.

For a Glorious Vacation

come to

Mackinac Island

Endowed by nature with great beauty, rich in legendary lore and historical facts, Mackinac Island claims first place among summer resorts of America, providing a diversity of recreation and sport features.



THE CHIPPEWA
offers delightful accommodations
Every room an outside room, overlooking Straits of Mackinac or Marquette Park

RATES
American plan as low as $4.00 per day
European plan as low as $2.50 per day
Without bath as low as $1.50 per day
(Hot and cold running water in all rooms)

Superior Cuisine — Unexcelled Service

The Chippewa Hotel

Mackinac Island, Michigan

HERE THEY ARE!

A Trade Directory for the Visual Field

FILMS

Bray Pictures Corporation (3, 6)
729 Seventh Ave., New York City.

Carlyle Ellis (1, 4)
53 Hamilton Terrace, New York City
Producer of Social Service Films

Eastman Kodak Co. (4)
Rochester, N. Y.
(See advertisement on outside back cover)

Eastman Teaching Films, Inc. (1, 4)
Rochester, N. Y.

Edited Pictures System, Inc. (1, 4)
330 W. 42nd St., New York City

Erpi Picture Consultants, Inc. (3)
250 W. 57th St., New York City
(See advertisement on page 150)

Ideal Pictures Corp. (1, 4)
26 E. Eighth St., Chicago, Ill.

Modern Woodmen of America (3, 4)
Rock Island, Ill.

Pinkney Film Service Co. (1, 4)
1028 Forbes St., Pittsburgh, Pa.

Ray-Bell Films, Inc. (3, 6)
817 University Ave., St. Paul, Minn.

Society for Visual Education (1, 4)
327 S. LaSalle St., Chicago, Ill.
(See advertisement on page 175)

United Projector and Films Corp. (1, 4)
228 Franklin St., Buffalo, N. Y.

Universal Pictures Corp. (3)
730 Fifth Ave., New York City
(See advertisement on page 175)

Wholesome Films Service, Inc. (3, 4)
48 Melrose St., Boston, Mass.
(See advertisement on page 173)

Williams, Brown and Earle, Inc. (3, 6)
918 Chestnut St., Philadelphia, Pa.

Y. M. C. A. Motion Picture Bureau (1, 4)
347 Madison Ave., New York City
19 S. LaSalle St., Chicago, Ill.
(See advertisement on page 177)

MOTION PICTURE MACHINES and SUPPLIES

Bell & Howell Co. (6)
1815 Larchmont Ave., Chicago, Ill.
(See advertisement on inside back cover)

Eastman Kodak Co. (4)
Rochester, N. Y.
(See advertisement on outside back cover)

Edited Pictures System, Inc. (1)
330 W. 42nd St., New York City

Herman A. DeVry, Inc. (3, 4)
1111 Center St., Chicago

Ideal Pictures Corp. (1, 4)
26 E. Eighth St., Chicago, Ill.

International Projector Corp. (3, 6)
90 Gold St., New York City
(See advertisement on pages 164-5)

Motion Picture Accessories Co. (3, 6)
43-47 W. 24th St., New York City.

Regina Photo Supply Ltd. (3, 6)
1924 Rose St., Regina, Sask.

United Projector and Film Corp. (3, 4)
228 Franklin St., Buffalo, N. Y.

Victor Animatograph Corp. (6)
Davenport, Iowa.
(See advertisement on inside front cover)

Williams, Brown and Earle, Inc. (3, 6)
918 Chestnut St., Philadelphia, Pa.

HISTORICAL PHOTOGRAPHS

Educational Research Studies, Ltd.
5537 Hollywood Blvd., Hollywood, Cal.
(See advertisement on page 177)

SCREENS

Da-Lite Screen Co.
2721 N. Crawford Ave., Chicago
(See advertisement on page 172)

Motion Picture Accessories Co.
43-47 W. 24th St., New York City.

Williams, Brown and Earle, Inc.
918 Chestnut St., Philadelphia, Pa.

SLIDES and FILM SLIDES

Conrad Slide and Projection Co.
510 Twenty-second Ave., East
Superior, Wis.

Eastman Educational Slides
Iowa City, Ia.

Edited Pictures System, Inc.
330 W. 42nd St., New York City

Ideal Pictures Corp.
26 E. Eighth St., Chicago, Ill.

Keystone View Co.
Meadville, Pa.
(See advertisement on page 172)

Radio-Mat Slide Co., Inc.
1674 Broadway, New York City
(See advertisement on page 179)

Society for Visual Education
327 S. LaSalle St., Chicago, Ill.
(See advertisement on page 175)

Spencer Lens Co.
19 Doat St., Buffalo, N. Y.
(See advertisement on page 149)

Victor Animatograph Corp.
Davenport, Iowa.
(See advertisement on inside front cover)

Williams, Brown and Earle, Inc.
918 Chestnut St., Philadelphia, Pa.

STEREOGRAPHS and STEREOSCOPES

Herman A. DeVry, Inc.
1111 Center St., Chicago

Keystone View Co.
Meadville, Pa.
(See advertisement on page 172)

STEREOPTICONS and OPAQUE PROJECTORS

Bausch and Lomb Optical Co.
Rochester, N. Y.
(See advertisement on page 177)

E. Leitz, Inc.
60 E. 10th St., New York City

Regina Photo Supply Ltd.
1924 Rose St., Regina, Sask.

Society for Visual Education
327 S. LaSalle St., Chicago, Ill.
(See advertisement on page 175)

Spencer Lens Co.
19 Doat St., Buffalo, N. Y.
(See advertisement on page 149)

Victor Animatograph Corp.
Davenport, Iowa.
(See advertisement on inside front cover)

Williams, Brown and Earle, Inc.
918 Chestnut St., Philadelphia, Pa.

REFERENCE NUMBERS

(1) indicates firm supplies 35 mm. silent.
(2) indicates firm supplies 35 mm. sound.
(3) indicates firm supplies 35 mm. sound and silent.
(4) indicates firm supplies 16 mm. silent.
(5) indicates firm supplies 16 mm. sound.
(6) indicates firm supplies 16 mm. sound and silent.

IS YOUR firm represented here? It should be. Continuous insertions under one heading cost only $1.50 per issue; additional listings under other headings, 50c each.